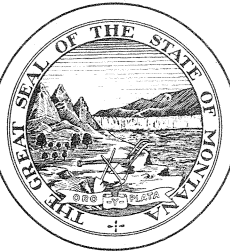


DEPARTMENT OF NATURAL RESOURCES AND CONSERVATION



BRIAN SCHWEITZER
GOVERNOR

DIRECTOR'S OFFICE (406) 444-2074
TELEFAX NUMBER (406) 444-2684

STATE OF MONTANA

WATER RESOURCES DIVISION (406) 444-6601
TELEFAX NUMBERS (406) 444-0533 / (406) 444-5918
<http://www.dnrc.mt.gov>

1424 9TH AVENUE
PO BOX 201601
HELENA, MONTANA 59620-1601

Distribution list / EA cover letter:

April 8, 2008

TO: Governor's Office, Bruce Nelson, Rm. 204, State Capitol, P.O. Box 200801, Helena, MT 59620-0801
Environmental Quality Council, Capitol Building, Room 106, P.O. Box 201704, Helena, MT 59620
MT Dept. Environmental Quality, Metcalf Building, P.O. Box 200901, Helena, MT 59620-0901
MT Dept. of Natural Resources and Conservation, 1625 11th Ave. Helena, MT 59620
Director's Office
Information Services Section
Water Resources Division, 1424 9th Ave., P.O. Box 201601, Helena, MT 59620-1601
Trust Land Management Division, 1625 11th Ave. Helena, MT 59620
Bill Schultz, Missoula Regional Office, 1610 S. 3rd St. W., Suite 103, P.O. Box 5004, Missoula, MT 59806-5004
Tony Liane, Southwestern Land Office, 1401 27th Avenue, Missoula, MT 59804
MT Dept. of Fish, Wildlife & Parks, 1420 E. 6th Ave. Helena, MT 59620
Director's Office
Mack Long, Regional Supervisor, DFWP R2, 3201 Spurgin Rd. Missoula, MT 59804
Brad Liermann, Fisheries Biologist, DFWP R2, P.O. Box 924, Philipsburg, MT 59858
MT State Library, 1515 E. Sixth Ave., P.O. Box 201800, Helena, MT 59620
Bill Dennis, Flint Creek Water Users Association, 65 McGuire Ln. Philipsburg, MT 59858
Montana Environmental Information Center, POB 1184, Helena, MT 59624
Montana Audubon Council, P.O. Box 924, Helena, MT 59624
Granite County Commissioners, P.O. Box 925, Philipsburg, MT 59858
Bret Bledsoe, Natural Resources Conservation Service, PO Box 926, Philipsburg, MT 59858
Karen Petersen, Granite Co. Conservation Dist., 105 S. Holland, PO Box 926, Philipsburg, MT 59858
Phil Odegard, HKM Engineering, 7 West 6th Ave. Suite 4W, P.O. Box 1009, Helena, MT 59624
Sunny and Barney Carnagey, 39886 Berenda Rd. Temecula, CA 92591
Wildlife Federation, P.O. Box 1175, Helena, MT 59624
Trout Unlimited, P.O. Box 7186, Missoula, MT 59807
Charlene Gentry, U.S. Forest Service, Pintler Ranger District, 88 Business Loop, Philipsburg, MT 59858
U.S. Army Corps of Engineers, 10 West 15th St., Suite 2200, Helena, MT 59626
Mark Wilson, U.S. Fish and Wildlife Service, MT Field Office, 585 Shepard Way • Helena, MT 59601

Ladies and Gentlemen:

The enclosed draft Montana Environmental Policy Act (MEPA) Environmental Assessment (EA) has been prepared for the East Fork Siphon Replacement Project and is submitted for your consideration. Please feel free to contact me at (406) 444-6622 (e-mail jdomino@mt.gov) should you have any questions or comments. Comments will be accepted until 5:00 p.m., Wednesday, May 7th 2008. Comments can also be mailed to: MT Dept. of Natural Resources and Conservation, State Water Projects Bureau, 1424 9th Avenue, P.O. Box 201601, Helena, MT 59620-1601, attn. James P. Domino. Copies of the EA are available upon request. The EA can also be viewed on the DNRC website at www.dnrc.mt.gov. Thank you.

Sincerely,

Handwritten signature of James P. Domino in cursive.

James P. Domino
Environmental Specialist
State Water Projects Bureau

STATE WATER PROJECTS
BUREAU
(406) 444-6646

WATER MANAGEMENT
BUREAU
(406) 444-6637

WATER OPERATIONS
BUREAU
(406) 444-0860

WATER RIGHTS
BUREAU
(406) 444-6610

Draft MEPA Environmental Assessment



Photograph of Project Location

East Fork Siphon Replacement

March 2008



List of Acronyms and Abbreviations

AIP	Agreement in Principle
COE	U.S. Army Corps of Engineers
DEQ	Montana Department of Environmental Quality
DFWP	Montana Department of Fish, Wildlife, and Parks
DNRC	Montana Department of Natural Resources and Conservation
EA	Environmental Assessment
EIS	Environmental Impact Statement
ESA	Endangered Species Act
EQIP	Environmental Quality Improvement Program
FCWUA	Flint Creek Water Users Association
MEPA	Montana Environmental Policy Act
NEPA	National Environmental Policy Act
NHP	Montana Natural Heritage Program
NRCS	Natural Resources Conservation Service
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Survey
SHPO	Montana State Historic Preservation Officer
SWCB	State Water Conservation Board
SWPB	State Water Projects Bureau

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East Fork Siphon Replacement Project: Draft Environmental Assessment and MEPA Checklist

PART I. PROPOSED ACTION DESCRIPTION

1. **Type of proposed state action:** Replacement of the existing East Fork Siphon with a new Structure. Replacement is needed due to the siphon's age and progressive deterioration.
2. **Agency authority for the proposed action:** The Montana Legislature enacted statute 85-1-101(1) through (6) MCA, which states: "It is hereby declared as follows:
 - (1) The general welfare of the people of Montana, in view of the state's population growth and expanding economy, requires that water resources of the state be put to optimum beneficial use and not wasted.
 - (2) The public policy of the state is to promote the conservation, development, and beneficial use of the state's water resources to secure maximum economic and social prosperity for its citizens.
 - (3) The state, in the exercise of its sovereign power, acting through the department of natural resources and conservation, shall coordinate the development and use of the water resources of the state so as to effect full utilization, conservation, and protection of its water resources.
 - (4) The development and utilization of water resources and the efficient, economic distribution thereof are vital to the people in order to protect existing uses and to assure adequate future supplies for domestic, industrial, agricultural, and other beneficial uses.
 - (5) The water resources of the state must be protected and conserved to assure adequate supplies for public recreational purposes and for the conservation of wildlife and aquatic life.
 - (6) The public interest requires the construction, operation, and maintenance of a system of works for the conservation, development, storage, distribution, and utilization of water, which construction, operation, and maintenance is a single object and is in all respects for the welfare and benefit of the people of the state.

Name of project: **East Fork Siphon Replacement Project**

3. Name, address and phone number of project sponsor(s) (if other than the agency):

Natural Resources Conservation Service, Montana State Office
10 East Babcock Street, Federal Building, Room 443
Bozeman, MT 59715-4704, Phone: (406) 587-6811

State Water Projects Bureau
MT. Dept. of Natural Resources & Conservation
1424 9th Ave., P.O. Box 201601,
Helena, MT 59620-1601, Phone: (406) 444-6646

4. Construction Timeline:

Estimated Commencement Date: October 2008

Estimated Completion Date: March 2009

Current Status of Project Design (% complete) 100%

5. Location affected by proposed action (county, range and township):

The siphon is located in Granite County, Township 5N, Range 5W, SW ¼ Section 25 (private land), NW ¼ Section 36 (State School Trust Land Section), approximately 10 miles southwest of Philipsburg. The DNRC possesses a permanent easement for the operation, maintenance and repair of the project (See Figure 2 on page 4 for local area map)

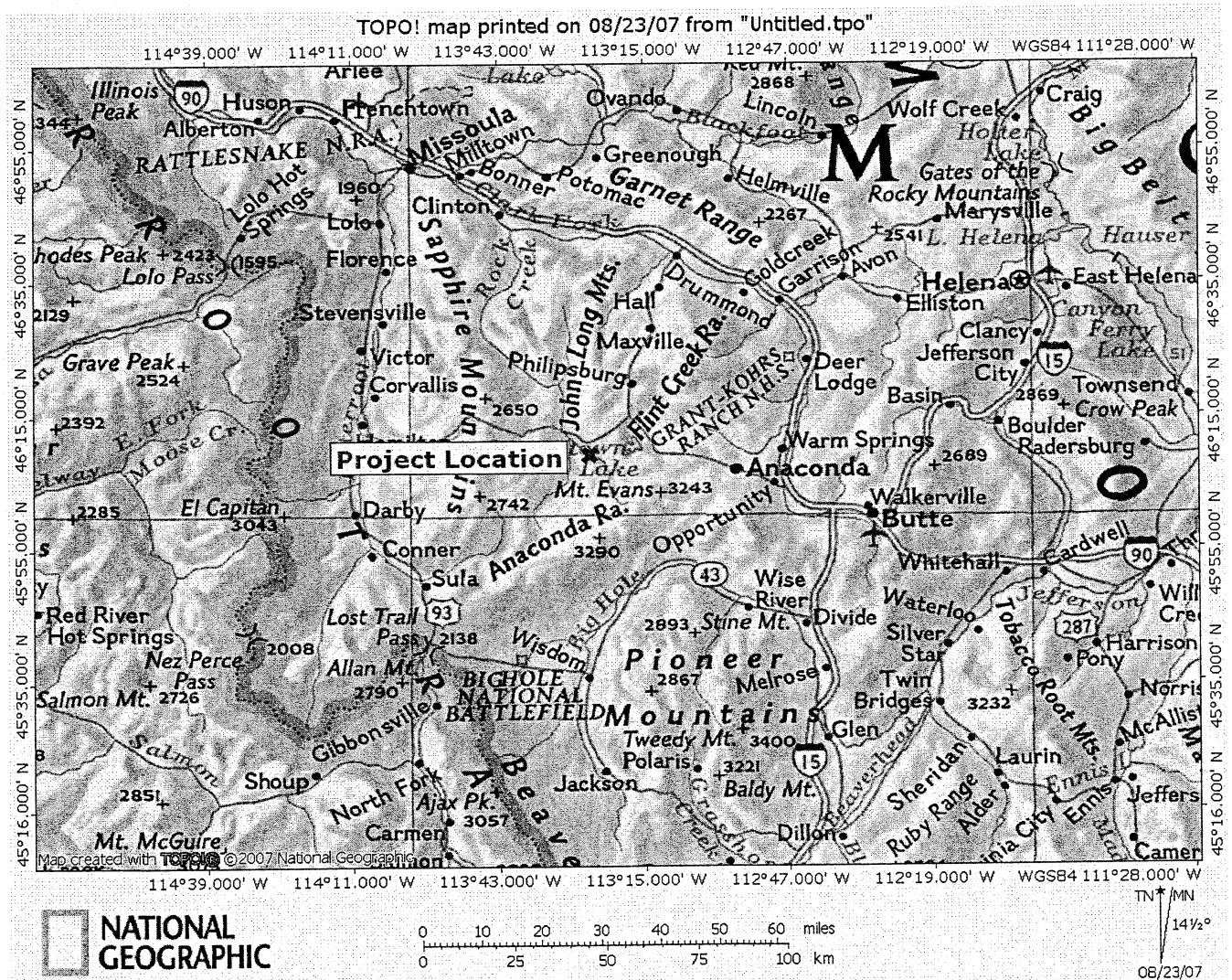


Figure 1. Project Location Map

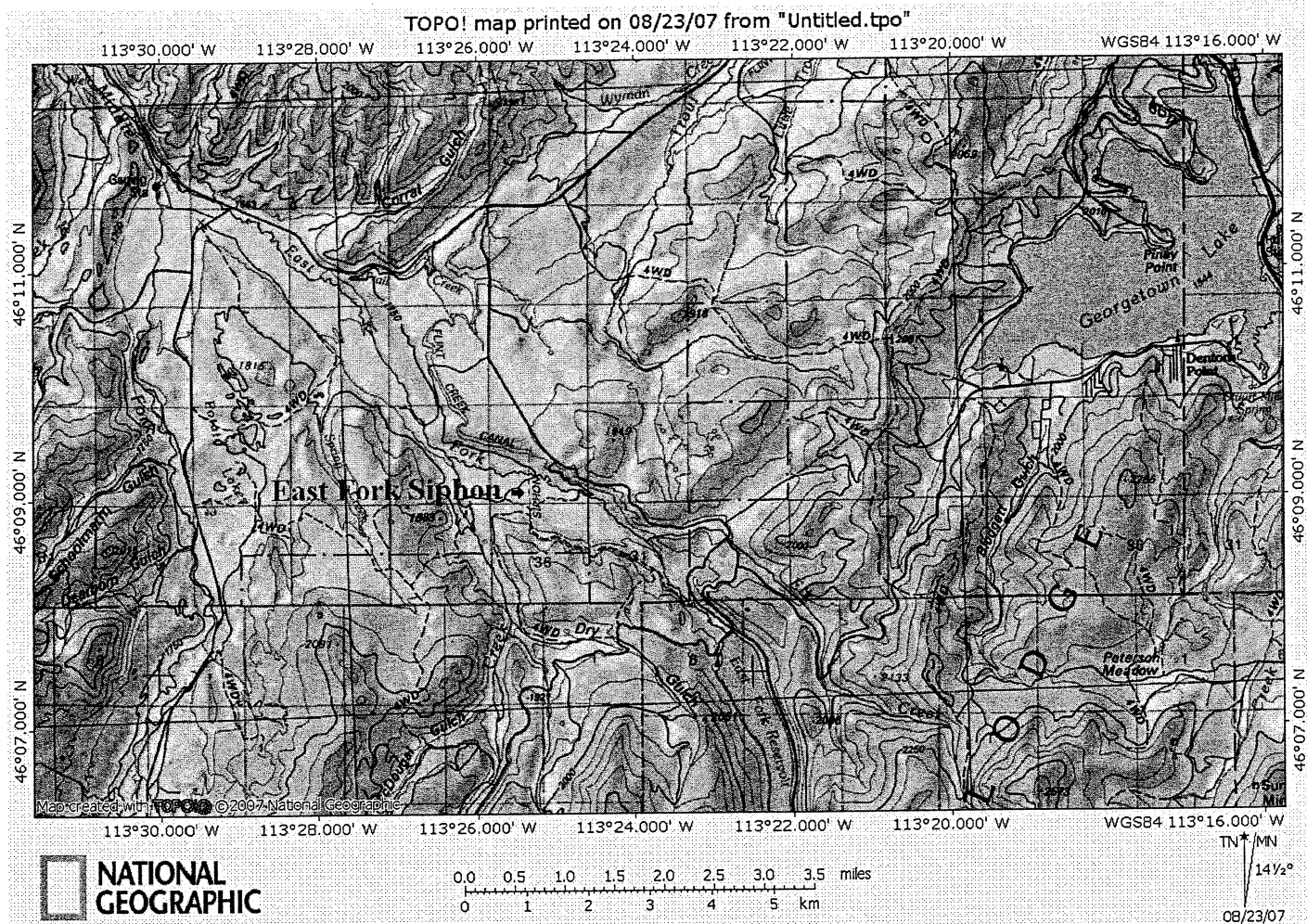


Figure 2. Local area map of the East Fork Siphon and the Flint Creek Water Project

6. **Project size -- estimate the number of acres that would be directly affected that are currently:**

	<u>Acres</u>		<u>Acres</u>
(a) Developed:		(d) Floodplain	<u>0</u>
Residential	<u>0</u>		
Industrial	<u>0</u>	(e) Productive:	
		Irrigated cropland	<u>0</u>
(b) Open Space/Woodlands/Recreation	<u>0</u>	Dry cropland	<u>0</u>
		Forestry	<u>0</u>
(c) Wetlands/ <u>Riparian Areas</u>	<u>1</u>	Rangeland	<u>9</u>
		Other	

7. **Local, State or Federal agencies that have overlapping or additional jurisdiction.**

(a) **Permits: All permits will be obtained prior to applicable project construction.**

The following permits would be needed:

<u>Agency Name</u>	<u>Permit</u>	<u>Status</u>
MT Dept. of Fish, Wildlife & Parks	MT Stream Protection Act (124) Permit	Pending
MT Dept. of Environmental Quality	Short-Term Exemption from Surface Water Quality (318 Authorization)	Pending
MT Dept. of Environmental Quality	Construction De-Watering Permit	Pending
MT Dept. of Environmental Quality	Stormwater Permit	Pending
U.S. Army Corps of Engineers	Federal Clean Water Act (404 Permit)	Pending
MT State Historic Preservation Office	Cultural Clearance	Obtained
U.S. Fish and Wildlife Service	Incidental Take Permit (Bull Trout)	Pending

(b) **Funding:**

<u>Agency Name</u>	<u>Funding Amount</u>
DNRC (Water Storage Account)	\$300,000
DNRC (Hydroelectric Account)	\$320,000
DNRC Renewable Resource Loan	\$400,000
DNRC Renewable Resource Grant	\$100,000
DNRC In-Kind Contribution (siphon)	\$58,068
DNRC In-kind Contribution (canal)	\$43,204
Flint Creek Water Users In-kind Contribution	\$12,450
Federal Match (NRCS – EQIP)	<u>\$902,684</u>
	Total \$2,136,406

(c) **Other Overlapping or Additional Jurisdictional Responsibilities:**

<u>Agency Name</u>	<u>Type of Responsibility</u>
State Historic Preservation Office	Cultural Resource Protection
DNRC Trust Land Management Division	Land Owner (section 36)
Natural Resources Conservation Service	National Environmental Policy Act and Endangered Species Act Compliance

Narrative summary of the proposed action including benefits and purpose:

The Flint Creek Water Project, located in Granite County, was completed in 1938. A main component of the Project, the East Fork Siphon conveys water from the 16,040 acre-foot East Fork Reservoir to a forty-mile network of irrigation canals. The 64 year-old siphon is slowly deteriorating from corrosion. It is composed of a 54-inch diameter steel pipe (1/4" thick), measuring 4056-feet in length. It conducts a flow of 150 cfs during the irrigation season peak. The project irrigates most of the upper and lower Philipsburg Valley. The siphon is located in Granite County, Township 5N, Range 5W, SW ¼ Section 25 (private land), NW ¼ Section 36 (State School Trust Land Section), approximately 10 miles southwest of Philipsburg. The DNRC has a permanent easement for the operation, maintenance and repair of the project. In the last four years, the siphon has been shutdown several times in order to repair nine holes, two cracks, and one concrete pipe-anchor. The siphon now risks total structural failure due to its age and progressive deterioration and needs to be replaced. The proposed action involves the replacement of the existing siphon with a similar structure. The old siphon would be excavated, removed and disposed of off-site at an appropriate facility. A new siphon of similar design and capacity would then be installed in the same location. A tracked excavator, backhoe, front-end loader, bull dozer, truck mounted crane, trailer mounted pumps, concrete truck, compressors and generators and dump trucks would be the main equipment used for the construction. Approximately 10 (linear) surface acres would be disturbed by the construction. The East Fork of Rock Creek would have to be crossed during the excavation and removal of the old siphon and the installation of the new structure. The creek crossing area would be dewatered by the use of a cofferdam upstream from the siphon. Flows in the East Fork of Rock Creek would be diverted using a temporary culvert and returned to the creek downstream from the construction area. Downstream flows would be maintained throughout the duration of the project to minimize potential impacts to water quality, quantity and fisheries. A temporary equipment crossing would also be constructed over the creek. The equipment crossing would be removed upon completion of the project, with all disturbed areas reclaimed and reseeded. Weed control would also be implemented. It is anticipated that the new siphon would have a design life of 50 to 75 years and would continue to serve as a main component of the Flint Creek Water Project, allowing for the continued use of water from the East Fork Reservoir. Sustaining the area's economy, providing irrigation and stock water, protecting bull trout and other fisheries resources, wildlife habitat, wetlands, and recreational use would be important benefits of this project.

The Montana DEQ, State Historic Preservation Office and Natural Heritage Program have been contacted concerning potential impacts to water resources, historic resources and the presence of any species of special concern within the vicinity of the proposed project, respectively. Montana Fish, Wildlife and Parks have been consulted concerning potential impacts to fish and wildlife. The Corps of Engineers have been contacted on 404 permitting requirements. The Natural Resources and Conservation Service (NRCS) and U.S. Fish and Wildlife Service (USFWS) were also consulted. A Natural Heritage file search indicated that Bull trout (a threatened species) and Westslope cutthroat trout (species of special concern) are found in the East Fork of Rock Creek. The lynx is also listed as threatened in the western third of Montana (including the project area). No other wildlife or fish species of special concern is known to exist in the vicinity of the project.

The Endangered Species Act (ESA) requires all federal agencies to consult with the USFWS on potential impacts to any listed species. The lead federal agency sponsor is also responsible for compliance with the National Environmental Policy Act (NEPA), the federal equivalent of the Montana Environmental Policy Act (MEPA). The NRCS, as the lead federal agency sponsor, initiated consultation with the USFWS on the potential impacts to Bull Trout resulting from the proposed project. The DNRC also participated in the consultation as owners of the East Fork Project. At the request of the USFWS, the NRCS completed a Biological Assessment (BA) on impacts to Bull Trout from the project.

The U.S. Fish and Wildlife Service authorized the project to proceed and is in the process of developing an Agreement in Principle (AIP) that would allow for the issuance of a temporary, incidental take permit for Bull Trout for the entire Flint Creek Project. The AIP would be issued under the condition that the DNRC would replace the existing diversion on the main canal with a new structure that would include a fish screen to prevent bull trout from entering the canal. The new diversion and fish screen would be installed within 5 years. Once the new diversion and fish screen are in place the temporary take permit would become permanent.

It is anticipated that the siphon replacement project will not cause any significant or long-term, permanent adverse impacts to the environment. The final design plans are provided in Appendix A. The NRCS Bull Trout Biological Assessment and DNRC letter on the future Main Canal Diversion replacement is provided in Appendix B.

The following photographs (including the cover page) were taken during a site visit in May, 2006:

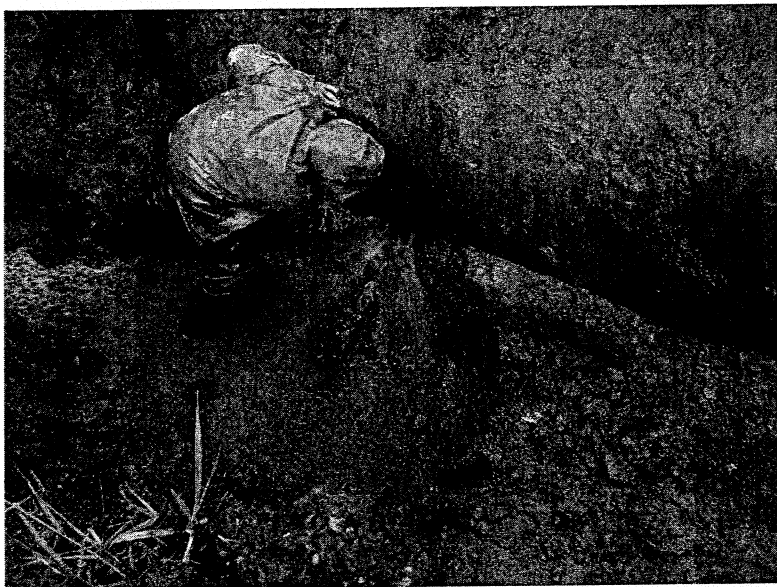


Figure 3. Significant
(typical) leak



Figure 4. Metal straps
of pipe anchor
replaced.



Figure 5. Seepage from the siphon.



Figure 6. Close-up of corrosion and pitting in siphon interior.

PART II. ENVIRONMENTAL REVIEW

- 1. Description and analysis of reasonable alternatives (including the no action alternative) to the proposed action whenever alternatives are reasonably available and prudent to consider and a discussion of how the alternatives would be implemented:**

Alternative A: No Action

**** Pease Note: The following is an analysis of the No Action Alternative as written by the Natural Resources Conservation Service, Columbia Basin Area Office, Missoula, Montana, submitted in 2003 as part of a technical assistance funding request:**

EAST FORK SIPHON PROJECT; ANALYSIS OF THE NO ACTION ALTERNATIVE

BACKGROUND

In 2003 the Flint Creek Water Users of Granite County, Montana requested technical and financial assistance from the NRCS to replace the East Fork Siphon. NRCS determined the project to be eligible for assistance through the Environmental Quality Improvement Program. The purpose of the project is to conserve water while meeting the irrigation needs of the water users and, protecting and enhancing recovery of native fisheries including the threatened bull trout.

The infrastructure, dam, canal, and siphon, for the Flint Creek Water Users irrigation water delivery system was completed in 1938 and put into service during the 1939 irrigation season. The average annual discharge of the Flint Creek Watershed is 99,000 acre feet (SCS 1990). The East Fork Siphon augments this flow by transferring 27,800 acre feet of water from the Rock Creek watershed to the Flint Creek watershed (Mt. State Engineer's Office, 1959). Water transferred to the Flint Creek watershed represents an addition of 28 per cent to the total annual discharge. The 54 inch diameter, 4,056 foot long siphon is now 65 years old. The expected life of the siphon was 50 years. In June of 2001 the siphon burst, causing the structure to be shut down, drained, and welded. Each year more corrosion holes have been found and repaired (S.G. Pinney and Associates, 2002).

Water from the Rock Creek Watershed provides all or part of the irrigation water for 53 operating units. These units are predominantly cow-calf operations. Hay production is used as winter feed for cattle. The primary agricultural product marketed from the area is calves (Meissner, 2004 per. com).

THE NO ACTION ALTERNATIVE:

Evaluation of the no action alternative is properly conducted not as the absence of action but rather as not meeting a need. In the absence of meeting a need the foreseeable impacts and chains of cause and effects are followed to a logical conclusion. In this case not taking action to replace the siphon will result in the eventual failure of the siphon and hence the irrigation system. The following outlines the reasonable and foreseeable impacts connected to the failure of the East Fork siphon.

ECONOMIC IMPACTS

Fifty-three operating units depend on East Fork Siphon water for all or part of their irrigation water (Ibid). Irrigated hay production in the Philipsburg Valley averages 2.25 tons per acre. In the lower Flint Creek Valley irrigated hay production averages 3.5 tons per acre (DNRC, 1996). Non-irrigated hay yields for these areas are 0.6 tons per acre and 1.5 tons per acre respectively (NRCS, 1996). Production would be reduced by more than 73 per cent in the Philipsburg area and 57 per cent in the lower Flint Creek Valley with the loss of irrigation water.

Hay from this area is used primarily as winter feed for cattle. It is not generally sold as a cash crop (Meissner, 2004 per. com.). Assuming cattle numbers remain constant, the lost production would have to be replaced with purchased hay. It requires approximately 2.5 tons of hay to over winter a cow (Wiersum, 2004 per com.). Replacement of lost production with purchased hay increases the cost of maintaining a cow by \$108 per year in the Philipsburg area and \$86 in the lower valley. Assuming a 90 per cent calf crop and a 500 pound calf in November sold for 0.97 per pound (Peel and Moyer, 2002) the increase in production cost represents 20 -25 per cent of gross sales.

Many factors influence the viability of an agricultural enterprise including debt load, markets, labor costs, and enterprise diversification. The individual viability of the 53 producers using East Fork Siphon irrigation water is unknown. However, it is reasonable to say that few agricultural enterprises have large margins and increases in production costs as large as those outlined above can place an operation in peril. Development pressures are increasing in Montana. The Philipsburg area, with the expansion of Discovery Basin Ski Area, is particularly vulnerable to conversion to non-agricultural use.

ENVIRONMENTAL IMPACTS

Reduced profit margins resulting from the loss of irrigation water will impact the human environment in some foreseeable ways. Having to purchase winter feed could result in cattle being turned on to range earlier and being held there later than is good for range health. Of particular concern would be the potential impacts on riparian areas. By extending the grazing season in both the spring and the fall could result in riparian degradation. Grazing riparian areas in both the spring and the fall is particularly detrimental to woody vegetation (Elmore and Kauffman, 1994).

Reduction of woody vegetation would adversely impact whitetail deer by reducing forage and cover resources. Neo-tropical migrant birds would be adversely impacted by a reduction in nesting habitat and increased vulnerability to nest predation and nest parasitism.

The aquatic environment would be impacted by increased thermal pollution, increased sedimentation and, reduced input of terrestrial carbon to the aquatic food chain. Increased water temperature could result in a change in both the vertebrate and invertebrate faunas. Reduction in imported carbon could reduce production of invertebrates and hence vertebrates in the system. Fewer fish could result in additional economic impacts to the area by reducing the number of angler days on Flint Creek.

Change in land use from agriculture to rural subdivisions is a possibility as the economic viability of agriculture is reduced. Subdivision development will fragment big game winter range. Elk are currently

using forage produced on irrigated land during the late summer and fall in preparation for the rut and gaining weight for winter (Firebaugh, MTFW&P, 2004 per com.). Fragmentation of winter range and elimination or reduction on the amount of irrigated alfalfa available could reduce the elk herds in the area. Reduced elk numbers would further impact the area economically by reducing hunter days in the area.

Change in land use could also impact the aquatic environment. Increased nutrient and toxicant input to Flint Creek from lawn chemicals and septic systems may occur. This could lead to eutrophication, depleted oxygen content, and thermal pollution impacting the fishery. The U.S. Fish and Wildlife Service (2002) identified residential sprawl as among the greatest threats to the recovery of bull trout in the Upper Clark Fork Recovery Unit (Including Flint Creek).

As stated earlier, the diversion of nearly 28,000 acre feet of water annually from the Rock Creek watershed to the Flint Creek watershed represents 22 percent of the total annual average discharge for the watershed (NRCS 1990). Irrigation water return flow in the basin during October range from 15 to 50 cubic feet per second. These return flows represent from 12 – 38 per cent of the total flow at that time of the year. During the irrigation season return flows can account for 91 per cent of the total flow in Flint Creek (MT DNRC, 1997). Clearly, the elimination of 28,000 acre feet of water from the irrigated lands will have significant impacts on the late season flow regime of Flint Creek. Reductions in flows could result in both thermal and physical barriers to fish migration interrupting the life cycles of the threatened Bull Trout and the species of special concern, West Slope Cutthroat Trout.

The entire length of Flint Creek has been identified as Bull Trout Habitat (USF&WS, 2002). The lower reaches are designated as foraging, movement, and over-winter habitat. The upper reaches of Flint Creek and all of its' tributary, Boulder Creek have been identified as critical bull trout habitat (USF&WS 2002). Not taking action to replace the siphon and maintain the current flow regime in Flint Creek could be construed as a violation of Section 7, (1), (A) of the Endangered Species Act. This section directs federal agencies to utilize their authorities in furtherance of the purposes of the act.

National Wetland Inventory data is not available for Granite County (USFWS, 2004, per. com.). An approximation of wetlands associated with Flint Creek was created using Soil Survey data (NRCS 1996) with hydric soils as surrogates for wetlands. The Soil Survey indicates there are 5,520 acres of hydric soils and 616 acres of soils with hydric inclusions associated with Flint Creek. Failure of the siphon would result in a 22 per cent reduction in annual average discharge of Flint Creek. The magnitude of this reduction of water in the basin would undoubtedly impact wetlands negatively. Many of these wetlands may be artificial or at least enhanced by the addition of irrigation water. However, Executive Order 11990 makes no distinction between artificial and natural wetlands. It simply establishes a policy of no net loss of wetland acres.

Documentation and calculations used in this analysis are on file in the NRCS Columbia Basin Area Office, Missoula, Montana.

LITERATURE CITED

- Elmore, Wayne and Boone Kauffman. 1994. Riparian and Watershed Systems: Degradation and Restoration. In; Ecological Implications of Livestock Herbivory in the West.
- Firebaugh, John, Wildlife Manager, Montana Department of Fish, Wildlife, and Parks. 2004. Personal Communication.
- Meissner, Justin. Soil Conservationist, USDA-NRCS. 2004. Personal Communication
- Montana Department of Natural Resources and Conservation. 1996. The Rehabilitation of the Main Canal of the Flint Creek Water Project.
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- USDI-Fish and Wildlife Service. 2002. 50 CFR, Part 17. Endangered and Threatened Wildlife and Plants; Proposed Designation of Critical Habitat for the Klamath River and Columbia River Distinct Population Segments of Bull Trout. Federal Register, Vol. 67, No. 230.
- Wiersum, Tim, Forester, USDA-NRCS. 2004. Personal Communication.

End of NRCS Inserted No Action Alternative Narrative

Alternative B: Proposed Action / Preferred Alternative

Note: additional detail and evaluation of the Proposed Action is included in Part V. The Environmental Review Checklist begins on page 15.

In the preferred Alternative, the Siphon would be replaced with a similar new structure. The replacement structure, which would have a design life of 50 to 75 years, would continue to serve as a main component of the Flint Creek Water Project, and allow for the continued conveyance of water from the East Fork Reservoir. Sustaining the area's agricultural economy, providing irrigation and stock water, protecting bull trout and other fisheries resources, wildlife habitat, wetlands, and recreational use would be achieved under this alternative. Detailed design plans (i.e. pipe material, size, etc.) for the preferred alternative are provided in Appendix A.

Alternative C: Lining the existing pipe

This alternative was not considered feasible due to the highly deteriorated condition of the existing pipe. The capacity of the siphon would also be reduced to an unacceptable level under this alternative.

2. Evaluation and listing of mitigation, stipulation, or other control measures enforceable by the agency or another government agency:

The permits and associated stipulations involving the construction of the new siphon are listed in Section 7(a) on page 5 and discussed on page 6 and in Part V, Section 4A (3 and 5) on pages 17 and 19 respectively.

PART III. PUBLIC PARTICIPATION

1. Describe the level of public involvement for this project if any, and, given the complexity and the seriousness of the environmental issues associated with the proposed action, is the level of public involvement appropriate under the circumstances?

The public will be notified by way of a public notice on DNRC web page at **www.dnrc.mt.gov**. Individual notices will be sent to the State Water Projects Bureau standard EA distribution list (as presented on the cover page of this EA) and to those that have requested a copy.

Duration of comment period:

A 30-day comment period will be provided. This level of public involvement is appropriate for the scale and scope of the proposed action. Opening and closing dates for comments are provided on the EA Cover Letter and Distribution List.

PART IV. EA PREPARATION

- 1. Based on the significance criteria evaluated in this EA, is an EIS required? If an EIS is not required, explain why the EA is the appropriate level of analysis for this proposed action.**

Based on an evaluation of the primary, secondary, and cumulative impacts to the physical and human environment under the Montana Environmental Protection Act (MEPA), this environmental review found no significant impacts from the proposed action. In determining the significance of the impacts, the DNRC assessed the severity, duration, geographic extent, and frequency of the impact, the probability that the impact would occur or reasonable assurance that the impact would not occur, growth-inducing or growth inhibiting aspects of the impact, the importance to the state and to society of the environmental resource or value affected, and precedent that would be set as a result of the proposed action that would commit the DNRC to future actions; and potential conflicts with local, state or federal laws. Therefore, an EA is the appropriate level of review and an EIS is not required.

- 2. Name, title, address and phone number of the person(s) responsible for preparing the EA:**

James P. Domino
Environmental Science Specialist
State Water Projects Bureau
Montana Department of Natural Resources and Conservation
1424 9th Avenue, P.O. Box 201601
Helena, MT 59620-1601
(406) 444-6622
e-mail jdomino@mt.gov

- 3. List of agencies consulted during preparation of the EA:**

Montana Department of Fish, Wildlife & Parks
Montana State Historic Preservation Office
Montana Natural Heritage Program – Natural Resources Information System
Montana Department of Environmental Quality
U.S. Army Corps of Engineers
Natural Resources Conservation Service
U.S. Fish and Wildlife Service

PART V. ENVIRONMENTAL REVIEW CHECKLIST

4. Evaluation of the impacts of the Proposed Action including secondary and cumulative impacts on the Physical and Human Environment.

A. PHYSICAL ENVIRONMENT

1. <u>LAND RESOURCES</u> Will the proposed action result in:	IMPACT *				Can Impact Be Mitigated *	Comment Index
	Unknown *	None	Minor *	Potentially Significant		
a. **Soil instability or changes in geologic substructure?			X			1a.
b. Disruption, displacement, erosion, compaction, moisture loss, or over-covering of soil, which would reduce productivity or fertility?			X			1b
c. **Destruction, covering or modification of any unique geologic or physical features?		X				1c.
d. Changes in siltation, deposition or erosion patterns that may modify the channel of a river or stream or the bed or shore of a lake?			X			1d.
e. Exposure of people or property to earthquakes, landslides, ground failure, or other natural hazard?		X				
f. Other:		X				

Narrative Description and Evaluation of the Cumulative and Secondary Effects on Land Resources:

1a. The excavation for the removal of the old siphon and installation of a new structure would not significantly affect geologic substructure or soil stability. The disturbed area (approximately 10 linear surface acres) would be regraded and reclaimed to the approximate original contours upon project completion.

1b. Soil would be disturbed during the excavation and construction process, which will cause some erosion, compaction, and loss of soil over-covering. The effects would be minor and non-significant. All disturbed areas would be reclaimed and regraded.

1c. No unique geologic features would be destroyed, covered, or modified by the proposed action.

1d. Minor, temporary changes to deposition patterns related to siltation may occur from the proposed action due to the need to cross the East Fork of Rock Creek as part of the construction. The effects would be short-term and non-significant. The creek would be temporarily diverted by a cofferdam to dewater the excavation area. A pipe would transfer water around the coffer dam and discharge back into the creek downstream from the work site while a temporary equipment crossing was constructed. The use of erosion control structures and best management practices as prescribed by the MT DEQ, MT DFWP and other pertinent agency permitting requirements would serve to mitigate any temporary adverse impacts.

2. <u>AIR</u> Will the proposed action result in:	IMPACT *				Can Impact Be Mitigated *	Comment Index
	Unknown *	None	Minor *	Potentially Significant		
a. **Emission of air pollutants or deterioration of ambient air quality? (Also see 13 (c).)			X			2a.
b. Creation of objectionable odors?		X				
c. Alteration of air movement, moisture, or temperature patterns or any change in climate, either locally or regionally?		X				
d. Other:		X				

Narrative Description and Evaluation of the Cumulative and Secondary Effects on Air Resources (attach additional pages of narrative if needed):

2a. Minor and temporary dust and vehicle emissions would be created by equipment during construction. The effect would be non-significant and end with the completion of the project.

3. <u>WATER</u> Will the proposed action result in:	IMPACT *				Can Impact Be Mitigated*	Comment Index
	Unknown *	None	Minor *	Potentially Significant		
a. *Discharge into surface water or any alteration of surface water quality including but not limited to temperature, dissolved oxygen or turbidity?			X			3a.
b. Changes in drainage patterns or the rate and amount of surface runoff?		X				
c. Alteration of the course or magnitude of floodwater or other flows?			X			3c.
d. Changes in the amount of surface water in any water body or creation of a new water body?		X				
e. Exposure of people or property to water related hazards such as flooding?		X				
f. Changes in the quality of groundwater?		X				
g. Changes in the quantity of groundwater?		X				
h. Increase in risk of contamination of surface or groundwater?			X			3.h
i. Effects on any existing water right or reservation?		X				
j. Effects on other water users as a result of any alteration in surface or groundwater quality?		X				
k. Effects on other users as a result of any alteration in surface or groundwater quantity?		X				
l. Effects on any wetlands		X				
m. Other:		X				

Narrative Description and Evaluation of the Cumulative and Secondary Effects on Water Resources (attach additional pages of narrative if needed):

3a. The proposed action may cause an increase in turbidity, but the increase would be temporary and non-significant. Stipulations limiting surface water discharge turbidity as required under the DEQ MPDES permits would be closely monitored and adhered to.

3c. The creek would be temporarily diverted by a cofferdam to dewater the excavation area. A pipe would transfer water around the cofferdam and discharge back into the creek downstream from the work site while a temporary equipment crossing was constructed. Flows would be maintained throughout the duration of the project. The use of erosion control structures and best management practices as prescribed by the MT DEQ, MT DFWP and other pertinent agency permitting requirements would serve to mitigate any temporary adverse impacts. The maximum creek diversion duration will be 10 days. Impacts are non-significant in the long-term.

3h. The risk of water contamination exists during construction of the stream crossing and while pumping water from the pipe trench. This impact is minor, temporary, non-significant and would end with the completion of the project. The risk would be mitigated by insuring that all equipment is properly maintained with no fluid leaks. Construction equipment refueling would take place at an off-site location away from the East Fork of Rock Creek, associated riparian zone, and any wetland areas, in compliance with the DEQ Stormwater Pollution Prevention Plan and General Permit for Discharge Associated with Construction Activity.

4. <u>VEGETATION</u> Will the proposed action result in?	IMPACT *				Can Impact Be Mitigated *	Comment Index
	Unknown *	None	Minor *	Potentially Significant		
a. Changes in the diversity, productivity or abundance of plant species (including trees, shrubs, grass, crops, and aquatic plants)?		X				
b. Alteration of a plant community?			X			4b.
c. Adverse effects on any unique, rare, threatened, or endangered species?		X				4c.
d. Reduction in acreage or productivity of any agricultural land?		X				
e. Establishment or spread of noxious weeds?			X			4e.
f. Other:		X				

Narrative Description and Evaluation of the Cumulative and Secondary Effects on Vegetation (attach additional pages of narrative if needed):4a.

4b. Some native grasses, sage, trees and shrubs would be disturbed from the excavation and installation of the new siphon. The impacts would be non-significant and minor and are negligible due to reclamation and reseeding of the disturbed area.

4c. A Natural Heritage Program file search was completed to determine if any plant species of special concern were present in the location of the project. There are no documented files or observations of any threatened or endangered plants, or plant species of special concern within the project site.

4e. An increase in noxious weeds may occur due to soil disturbance and equipment operation. Effects are negligible in the long-term because of reclamation and weed control implementation.

** 5. FISH/WILDLIFE Will the proposed action result in:	IMPACT *				Can Impact Be Mitigated *	Comment Index
	Unknown *	None	Minor *	Potentially Significant		
a. Deterioration of critical fish or wildlife habitat?		X				
b. Changes in the diversity or abundance of game animals or bird species?		X				
c. Changes in the diversity or abundance of non-game species?		X				
d. Introduction of new species into an area?		X				
e. Creation of a barrier to the migration or movement of animals?			X			5e.
f. Adverse effects on any unique, rare, threatened, or endangered species?			X			5f.
g. Increase in conditions that stress wildlife populations or limit abundance (including harassment, legal or illegal harvest or other human activity)?			X			5g.
h. Other:		X				

Narrative Description and Evaluation of the Cumulative and Secondary Effects on Fish and Wildlife:

5e. No construction activity will be permitted in the East Fork of Rock Creek between September 1 and September 25. The diversion dam and equipment / access crossing will be constructed before or after this window to allow for Bull Trout migration. The access crossing will also be designed to accommodate the anticipated base flow of 6cfs at 3fps velocity. (See Appendix A for additional information). The temporary diversion dam and equipment crossing would not create a barrier to bull trout or other fish.

5f. A Natural Heritage file search indicated that Bull trout (a threatened species) and Westslope cutthroat trout (species of special concern) are found in the East Fork of Rock Creek. The lynx is also listed as threatened in the western third of Montana (including the project area). No other wildlife or fish species of special concern is known to exist in the vicinity of the project.

5g. The use of erosion control structures (straw bales, erosion control mats, silt fencing etc.), best management practices, project timing (construction between Sept. 1 and 25 – see 5e.), and maintaining downstream flows (as recommended by the DEQ and DFWP) will greatly reduce the magnitude of any potential impacts to bull trout and other fish within the construction area. It is not anticipated that the proposed action would significantly impact bull trout, bull trout migration or bull trout spawning activity (which occurs primarily in September), westslope cutthroat trout, lynx or any other fish or wildlife species.

Local wildlife within the immediate vicinity of the project location (e.g. mule and whitetail deer, elk, moose, black bear, mountain lion, raptors, waterfowl) would most likely avoid the immediate work site during construction. This impact would be minor, non-significant and end upon project completion.

All non-significant but potentially adverse impacts to fish and wildlife resources will be temporary, minor, short-term and end upon completion of the project. The NRCS Bull Trout Biological Assessment (BA) is provided in Appendix B. The BA findings indicate that adverse impacts to Bull Trout from the proposed action are minimal and would be mitigated to non-significant levels by following the stipulations set forth in the DFWP 124-Permit. The USFWS has authorized the project to proceed and is in the process of developing an Agreement in Principle (AIP) that would allow for the issuance of a temporary, incidental take permit for Bull Trout for the entire Flint Creek Project. The AIP would be issued under the condition that the DNRC would replace the existing diversion on the main canal with a new structure that would include a fish screen to prevent bull trout from entering the canal. The new diversion and fish screen would be installed within 5 years. Once the new diversion and fish screen are in place the temporary take permit would become permanent.

B. HUMAN ENVIRONMENT

6. <u>NOISE/ELECTRICAL EFFECTS</u> Will the proposed action result in:	IMPACT *				Can Impact Be Mitigated *	Comment Index
	Unknown *	None	Minor *	Potentially Significant		
a. Increases in existing noise levels?			X			6a.
b. Exposure of people to serve or nuisance noise levels?		X				
c. Creation of electrostatic or electromagnetic effects that could be detrimental to human health or property?		X				
d. Interference with radio or television reception and operation?		X				
e. Other:		X				

Narrative Description and Evaluation of the Cumulative and Secondary Effects on Noise/Electrical Effects (attach additional pages of narrative if needed):

6a. There will be a temporary increase in noise levels during construction. This would end after completion of the construction activity. There are no residences adjacent to the site that would be disturbed by the activity.

7. <u>LAND USE</u> Will the proposed action result in:	IMPACT *				Can Impact Be Mitigated *	Comment Index
	Unknown *	None	Minor *	Potentially Significant		
a. Alteration of or interference with the productivity or profitability of the existing land use of an area?		X				
b. Conflict with a designated natural area or area of unusual scientific or educational importance?		X				
c. Conflict with any existing land use whose presence would constrain or potentially prohibit the proposed action?		X				
d. Adverse effects on or relocation of residences?		X				
e. Increase regulatory restrictions on private property?		X				
f. Other:		X				

Narrative Description and Evaluation of the Cumulative and Secondary Effects on Land Use (attach additional pages of narrative if needed):

8. <u>RISK/HEALTH HAZARDS</u> Will the proposed action result in:	IMPACT *				Can Impact Be Mitigated *	Comment Index
	Unknown *	None	Minor *	Potentially Significant		
a. Risk of an explosion or release of hazardous substances (including, but not limited to oil, pesticides, chemicals, or radiation) in the event of an accident or other forms of disruption?		X				
b. Affect an existing emergency response or emergency evacuation plan, or create a need for a new plan?		X				
c. Creation of any human health hazard or potential hazard?		X				
d. Other:		X				

Narrative Description and Evaluation of the Cumulative and Secondary Effects on Risk/Health Hazards (attach additional pages of narrative if needed):

9. <u>COMMUNITY IMPACT</u> Will the proposed action result in:	IMPACT *				Can Impact Be Mitigated *	Comment Index
	Unknown *	None	Minor *	Potentially Significant		
a. Alteration of the location, distribution, density, or growth rate of the human population of an area?		X				
b. Alteration of the social structure of a community?		X				
c. Alteration of the level or distribution of employment or community or personal income?		X				
d. Changes in industrial or commercial activity?		X				
e. Increased traffic hazards or effects on existing transportation facilities or patterns of movement of people and goods?		X				
f. Other:		X				

Narrative Description and Evaluation of the Cumulative and Secondary Effects on Community Impact (attach additional pages of narrative if needed):

10. <u>PUBLIC SERVICES/TAXES/UTILITIES</u> Will the proposed action result in:	IMPACT *				Can Impact Be Mitigated *	Comment Index
	Unknown *	None	Minor *	Potentially Significant		
a. Will the proposed action have an effect upon or result in a need for new or altered governmental services in any of the following areas: fire or police protection, schools, parks/recreational facilities, roads or other public maintenance, water supply, sewer or septic systems, solid waste disposal, health, or other governmental services? If any, specify:		X				10a.
b. Will the proposed action have an effect upon the local or state tax base and revenues?		X				
c. Will the proposed action result in a need for new facilities or substantial alterations of any of the following utilities: electric power, natural gas, other fuel supply or distribution systems, or communications?		X				
d. Will the proposed action result in increased use of any energy source?		X				
e. Define projected revenue sources						10e.
f. Define projected maintenance costs.						10f.
g. Other:		X				

Narrative Description and Evaluation of the Cumulative and Secondary Effects on Public Services/Taxes/Utilities (attach additional pages of narrative if needed):

10a. The proposed action would not have an effect upon or result in a need for new or altered governmental services.

10e. The DNRC State Water Projects Bureau, USDA Natural Resources Conservation Service and the Flint Creek Water Users Association will provide funding for the project. Funding sources are identified on page 5, Section 7 (b).

10f. All maintenance costs associated with the Project will be the responsibility of the Flint Creek Water Users Association.

** 11. AESTHETICS/RECREATION	IMPACT *				Can Impact Be Mitigated *	Comment Index
	Will the proposed action result in:	Unknown *	None	Minor *	Potentially Significant	
a. Alteration of any scenic vista or creation of an aesthetically offensive site or effect that is open to public view?				X		11a.
b. Alteration of the aesthetic character of a community or neighborhood?			X			
c. Alteration of the quality or quantity of recreational/tourism opportunities and settings?				X		11c.
d. Will any designated or proposed wild or scenic rivers, trails or wilderness areas be impacted?			X			
e. Other:			X			

Narrative Description and Evaluation of the Cumulative and Secondary Effects on Aesthetics/Recreation (attach additional pages of narrative if needed):

11 a & c. Construction will temporarily affect the aesthetics of the area in the short-term. Some anglers may be impacted. The area receives light angling use as the project is located primarily on private land. The quality of the recreational opportunities and setting may be temporarily impacted. The effects will be minor, short-term and non-significant and end with the completion of the project.

12. <u>CULTURAL/HISTORICAL RESOURCES</u> Will the proposed action result in:	IMPACT *				Can Impact Be Mitigated *	Comment Index
	Unknown *	None	Minor *	Potentially Significant		
a. **Destruction or alteration of any site, structure or object of prehistoric historic, or paleontological importance?		X				12a.
b. Physical change that would affect unique cultural values?		X				12b
c. Effects on existing religious or sacred uses of a site or area?		X				12c.
d. Will the project affect historic or cultural resources?		X				12d.
e. Other:		X				12e.

Narrative Description and Evaluation of the Cumulative and Secondary Effects on Cultural/Historical Resources (attach additional pages of narrative if needed):

12a-e. The proposed project will not result in the destruction, disturbance or alteration of any known site, structure, or object of prehistoric, cultural, religious, sacred, historic or paleontological importance.

SIGNIFICANCE CRITERIA

13. <u>SUMMARY EVALUATION OF SIGNIFICANCE</u>	IMPACT *				Can Impact Be Mitigated *	Comment Index
	Unknown *	None	Minor *	Potentially Significant		
Will the proposed action, considered as a whole:						
a. Have impacts that are individually limited, but cumulatively considerable? (A project or program may result in impacts on two or more separate resources that create a significant effect when considered together or in total.)		X				13a.
b. Involve potential risks or adverse effects, which are uncertain but extremely hazardous if they were to occur?		X				
c. Potentially conflict with the substantive requirements of any local, state, or federal law, regulation, standard or formal plan?		X				
d. Establish a precedent or likelihood that future actions with significant environmental impacts will be proposed?		X				
e. Generate substantial debate or controversy about the nature of the impacts that would be created?		X				
f. Is the project expected to have organized opposition or generate substantial public controversy?		X				

Narrative Description and Evaluation of the Cumulative and Secondary Effects on Significance Criteria (attach additional pages of narrative if needed):

13a. This EA found no significant impacts to the human or physical environment from the proposed action.

PART VI. NARRATIVE EVALUATION AND COMMENT

This EA did not reveal any significant negative impacts to the physical and human environment stemming from the proposed action. No threatened or endangered species would be significantly affected, and no unique or sensitive physical, cultural or historic features would be disturbed. The impacts associated with the actual construction will be short-term, minor and end with the completion of the project. Impacts associated with potentially small increases in the sediment loads, weed proliferation, fish and wildlife stress, and the quality of the recreational experience will be mitigated by project timing, maintaining in-stream flows, providing upstream and downstream fish passage, reclamation, reseeding, weed control efforts, and the implementation of all recommended best management practices. The NRCS Bull Trout Biological Assessment (BA) is provided in Appendix B. The BA findings indicate that adverse impacts to Bull Trout from the proposed action are minimal and would be mitigated to non-significant levels by following the stipulations set forth in the DFWP 124-Permit. The U.S. Fish and Wildlife Service has authorized the project to proceed. The proposed project will not affect public safety or the beneficial uses of reservoir water.

References:

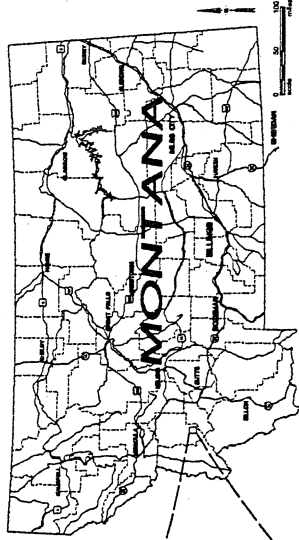
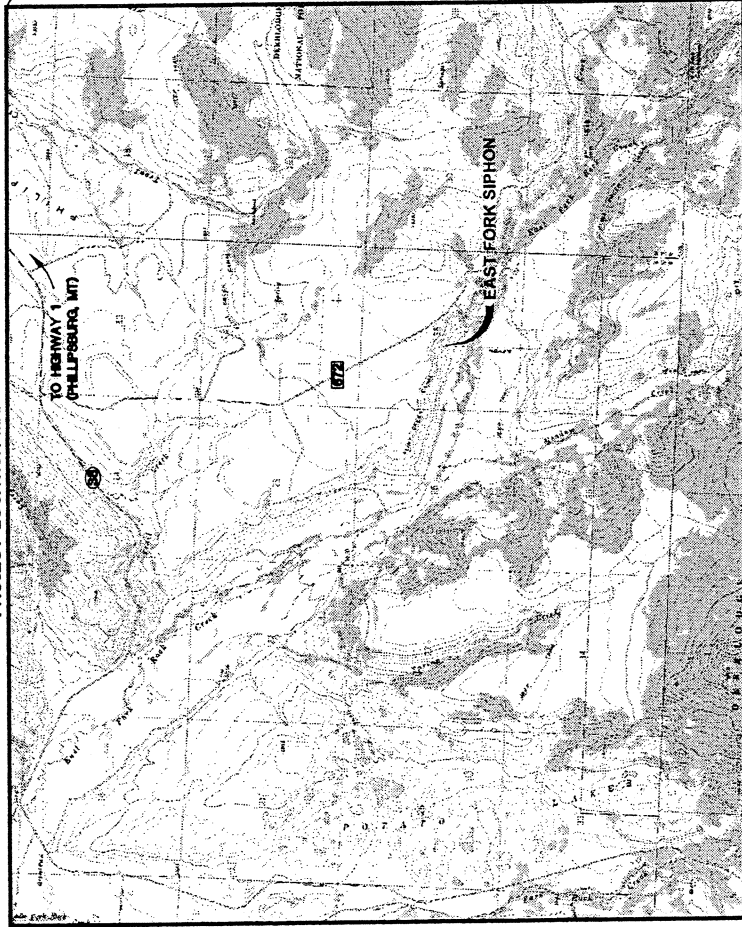
1. Biological Assessment for USDA, NRCS – Replacement of an Irrigation Diversion Siphon through the East Fork of Rock Creek that is likely to Adversely Affect the Threatened Bull Trout, NRCS Montana State Office, Bozeman, MT. March 2008.
2. Consultation with the U.S. Fish and Wildlife Service, Helena Field Office, Helena, MT. February 2008.
3. Consultation with Mr. Brad Liermann, MT Department of Fish, Wildlife and Parks Fisheries Biologist, Region 2, Philipsburg, MT. 2007.
4. Consultation with the MT Department of Environmental Quality, Water Protection Bureau, Helena, MT. November 2007
5. East Fork Siphon Replacement Final Design Report, HKM Engineering, Helena MT. November 2007
6. Consultation with the U.S. Army Corps of Engineers, Helena MT. Regulatory Office, October 2007
7. Species of Special Concern File Search, Montana Natural Heritage Program, Helena, MT. August 2007.
8. Consultation with the State Historic Preservation Office, Helena, MT. January 2006
9. East Fork Siphon Replacement, No Action Alternative. Natural Resources Conservation Service, Columbia Basin Area Office, Missoula, MT. 2003
10. Montana Water Law. MT Department of Natural Resources and Conservation, Water Resources Division, Helena MT. 2003
11. A Guide to the Montana Environmental Policy Act, John Munding and Todd Everts, 1998. Revised by Larry Mitchell, 2004 and Todd Everts, 2006. Published by the Legislative Environmental Policy Office, Environmental Quality Council.
12. A Guide to Stream Permitting in Montana, MT DNRC, Conservation Districts Bureau, 1625 11th Ave. Helena, MT 59620. First issued April 1990, revised June 1993, Oct. 1996, March 1997, Sept. 2000 and Jan. 2005.
13. State Water Conservation Projects, MT DNRC, Engineering Bureau, Water Resources Division. Helena, MT March 1977.
14. Climax Vegetation of Montana Based on Soils and Climate, U.S. Dept. of Agriculture, Soil Conservation Service, Bozeman, MT September 1976

Appendix A – Final Design Plans, by HKM Engineering

EAST FORK SIPHON REPLACEMENT

GRANITE COUNTY, MONTANA

PROJECT LOCATION MAP



SHEET INDEX

SHT. NO.	DESCRIPTION	SHT. NO.	DESCRIPTION
G-1	COVER SHEET, PROJECT LOCATION, SHEET INDEX	D-5	DIVERSION DAM / ACCESS ROAD AND STREAM CROSSING DETAILS
G-2	PROJECT PLAN & COORDINATE TABLES	D-6	SEDIMENT TRAP DETAILS
PP-1	STATION 129+03 TO 141+00 PLAN & PROFILE	GS-1	GENERAL STRUCTURAL NOTES
PP-2	STATION 141+00 TO 154+00 PLAN & PROFILE	S-1	INLET STRUCTURE DEMOLITION AND CRACK REPAIR
PP-3	STATION 154+00 TO 167+00 PLAN & PROFILE	S-2	INLET STRUCTURE REHABILITATION DETAILS
PP-4	STATION 167+00 TO 189+45 PLAN & PROFILE	S-3	INLET STRUCTURE REHABILITATION DETAILS
XS-1	CROSS SECTIONS AT PIPE APPURTENANCES AND TRENCH DETAILS	S-4	INLET STRUCTURE REHABILITATION DETAILS
D-1	ACCESS PORT AND AIR VALVE DETAILS	S-5	OUTLET STRUCTURE REHABILITATION DETAILS
D-2	DRAIN ASSEMBLY DETAILS	S-6	RAILING DETAILS
D-3	DRAIN ASSEMBLY DETAILS	TP-1	TEST PIT LOGS
D-4	DRAIN ASSEMBLY AND MISCELLANEOUS DETAILS		

Prepared for:
The Montana
Department of Natural Resources
and Conservation



State Water Projects Bureau
P.O. Box 201601
Helena, MT 59620-1601
(406) 444-6846

Prepared by:



Approved: Kevin Smith, P.E., Chief
State Water Projects Bureau, Montana DNR/C



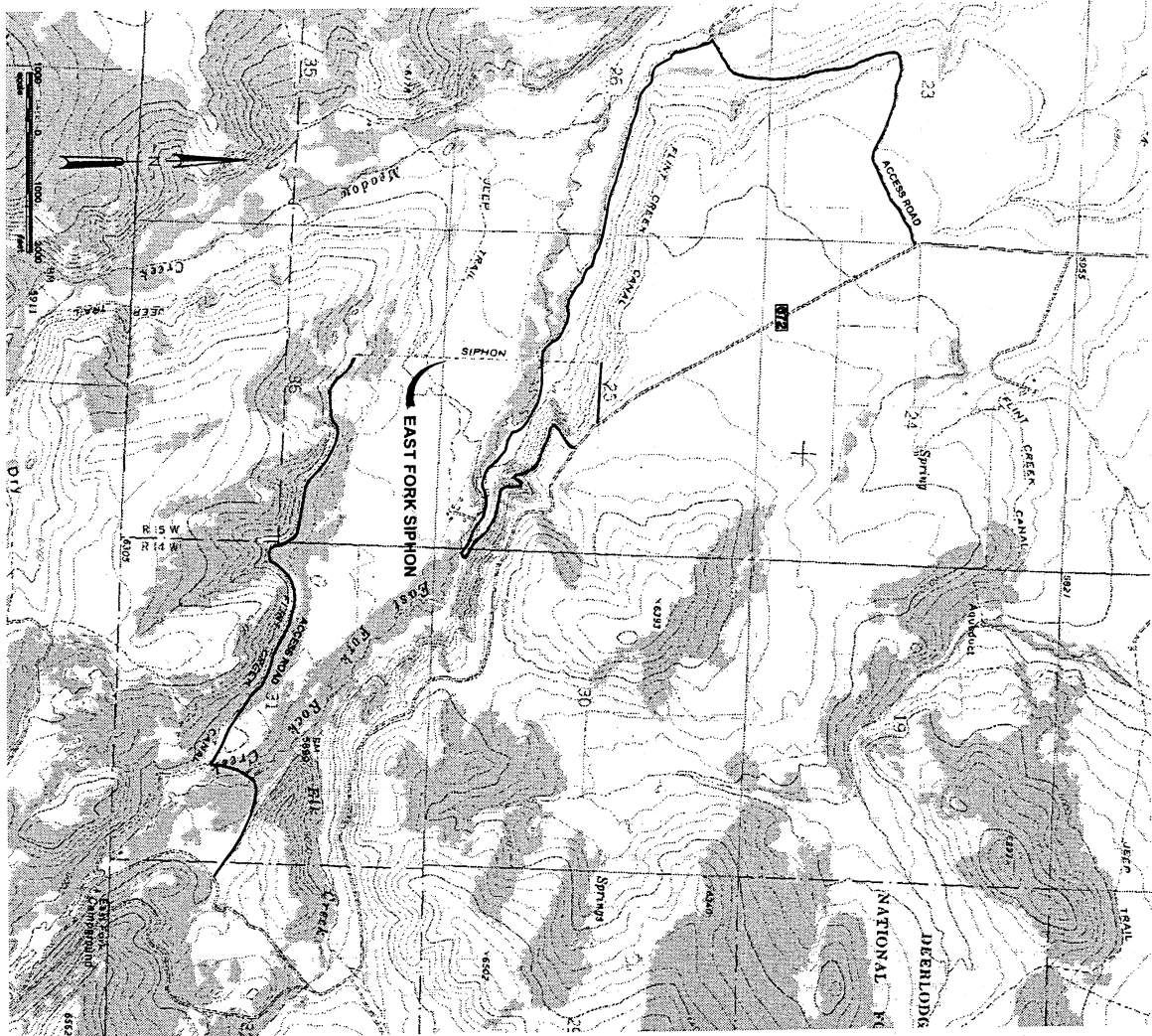
THE TSP HEREBY CERTIFIES THAT, "TO THE BEST OF MY PROFESSIONAL KNOWLEDGE, JUDGMENT AND BELIEF, THESE PLANS MEET NRC'S PRACTICE STANDARDS 4300D, 587 AND 572."

SINCE THE DESIGN
7 West 6th Ave., Suite 4W
P.O. Box 1009
Helena, MT 59604
Phone: (406) 442-0370
Fax: (406) 442-0377

PROJ. NO. 42M087.183

DECEMBER 2007

Sheet No.
G-1



CONTROL POINT COORDINATES:

POINT	NORTHING	EASTING	ELEVATION	NOTES
CP35	72016.477	97272.446	6628.65	5/8" REBAR W/RED PLASTIC CAP
CP36	72024.434	97484.719	6621.62	5/8" REBAR W/RED PLASTIC CAP
CP37	71813.644	97217.803	5714.43	5/8" REBAR W/RED PLASTIC CAP
CP41	715681.106	972657.290	5994.61	5/8" REBAR W/RED PLASTIC CAP
CP42	716123.9741	974981.0909	5973.27	5/8" REBAR W/RED PLASTIC CAP

NOTES:
1. CONTROL POINTS ESTABLISHED UNDER SEPARATE CONTRACT BY OTHERS.

- BASE OF REBAR: GPS SURVEY-ORIS SOLUTION NAD83(1998) CORRS FT
STATE PLANE MONTANA ZONE 2500 COORDINATES
CSF = 0.98921285
- VERTICAL DATUM IS NAVD83-BASED UPON NOS MARKS P5623 (P50380)
& P58 (P50285).

GENERAL NOTES:

- ALL WORK SHALL BE COMPLETED IN ACCORDANCE WITH THE EAST FORK SIPHON REPLACEMENT PROJECT MANUAL.
- BETTER CONDITION SHALL EXIST PRIOR TO CONSTRUCTION AS DETERMINED BY THE CONTRACTOR. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROTECTION AND TO BE REPAIRED IN-HAND AT THEIR PREVIOUS LOCATION. ALL BRIGATION DITCHES DISTURBED DURING CONSTRUCTION ARE TO BE RECONSTRUCTED AT THEIR ORIGINAL LOCATION, GRADE, AND SIZE. THE PLANS MAY NOT INCLUDE ALL FENCES AND DITCHES THAT WILL NEED REMOVAL, RECONSTRUCTION AND/OR REPAIRS.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING WITH THE OWNERS OF UNDERGROUND UTILITIES & COMMUNAL UTILITIES TO THE LOCATION OF THEIR UNDERGROUND LINES. THE CONTRACTOR IS SOLELY RESPONSIBLE FOR ANY DAMAGE DONE TO THESE INSTALLATIONS DUE TO FAILURE TO LOCATE THEM OR TO PROPERLY PROTECT THEM.
- THE CONTRACTOR IS SPECIFICALLY CAUTIONED THAT THE LOCATION AND/OR ELEVATION OF EXISTING UTILITIES AS SHOWN ON THESE PLANS ARE BASED ON RECORDS AND FIELD MARKINGS OF THE VARIOUS UTILITIES INFORMATION IS NOT TO BE RELIED ON AS BEING EXACT OR COMPLETE. THE CONTRACTOR MUST CALL THE LOCAL UTILITY LOCATION SERVICE AT LEAST 48 HOURS BEFORE ANY EXCAVATION TO REQUEST EXACT FIELD LOCATIONS OF UTILITIES. CALL BEFORE YOU DIG. 1-800-424-5858.
- THE CONTRACTOR SHALL RESTRICT ACTIVITIES TO WITHIN THE LIMITS OF CONSTRUCTION SHOWN ON THE PLANS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING NECESSARY PERMITS, EASEMENTS, AND COORDINATION WITH ADJACENT PROPERTY OWNERS.
- TEST PITS ARE SHOWN IN THE PLANS AT THEIR APPROXIMATE LOCATIONS AND DEPTHS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROTECTION AND TO BE REPAIRED IN-HAND AT THEIR PREVIOUS LOCATION. THE CONTRACTOR SHALL BE REQUIRED TO KEEP THE TRENCH FREE OF WATER. SEE TEST PIT LOGS AND GEOTECHNICAL DATA REPORT FOR MORE INFORMATION.
- THE VERTICAL PIPE ALIGNMENT HAS BEEN DEVELOPED BASED ON 20 FT PIPE LENGTHS AND MAXIMUM DEFLECTIONS OF 0.5 DEGREES. JOINT DEFLECTIONS ARE NOT TO EXCEED THAT RECOMMENDED BY THE MANUFACTURER.
- NO CONSTRUCTION ACTIVITY WILL BE ALLOWED IN EAST FORK ROCK CREEK BETWEEN SEPTEMBER 1, 2008 AND SEPTEMBER 25, 2008. DIVERSION DAM/ACCESS CROSSING MUST BE CONSTRUCTED PRIOR TO THE START OF THE PIPE INSTALLATION. SEE 124 PERMIT IN CONTRACT DOCUMENTS FOR ADDITIONAL INFORMATION.

LEGEND:

- = GEOTECHNICAL TEST PIT
- △ = SURVEY CONTROL POINT
- = APPROXIMATE LIMIT OF FORESTED AREA
- = BARRIER FENCE
- = LIMITS OF CONSTRUCTION

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• Project No. 42W087.183 • Cover_alphon.dwg • Date 2007 • Designed JK • Drawn DAS • Checked JK • Approved PAK

EAST FORK SIPHON REPLACEMENT
GRANITE COUNTY, MONTANA

PROJECT PLAN
& COORDINATE TABLES

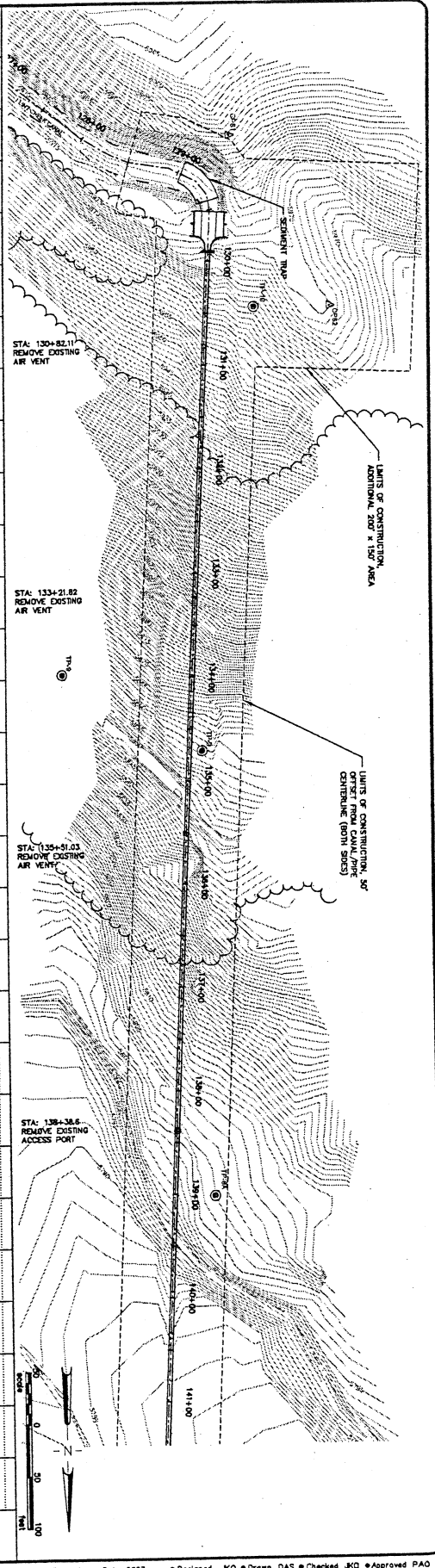
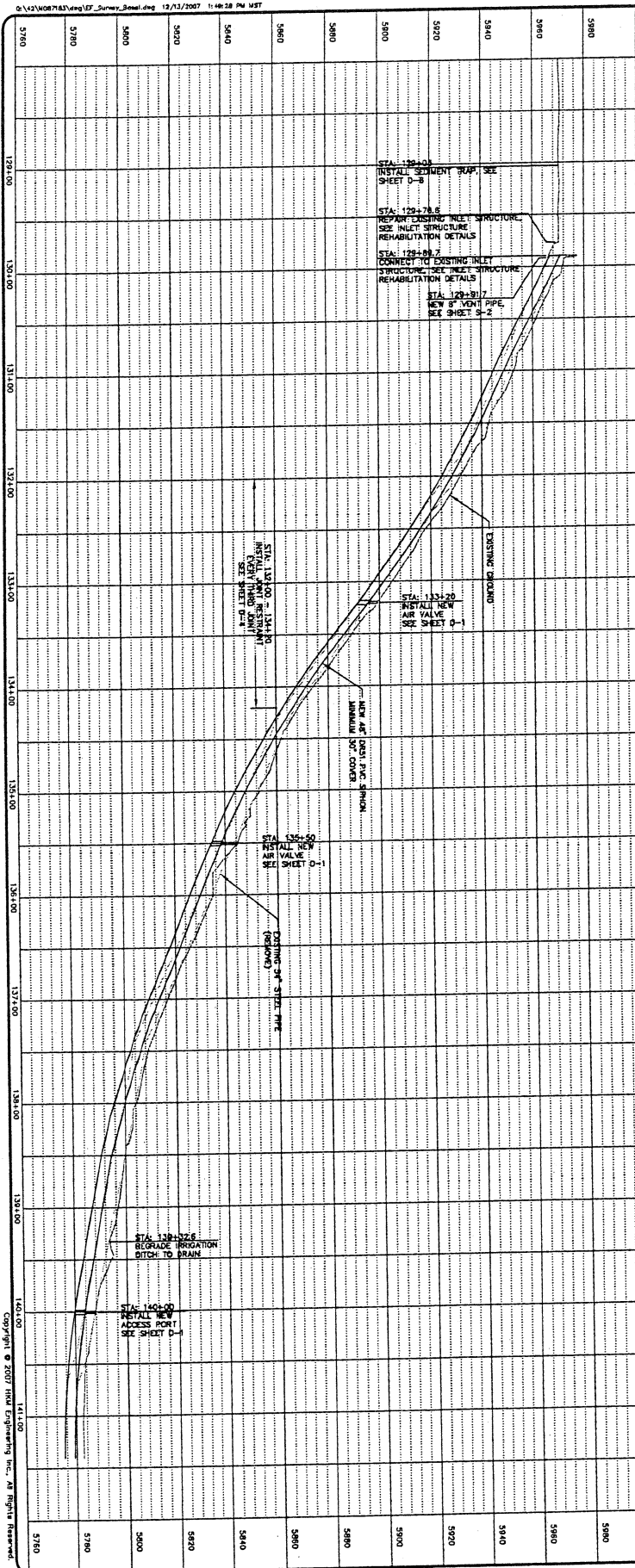
WARNING
IF THIS BAR SCALE
IS NOT TO SCALE
THIS DRAWING IS
NOT TO SCALE

No.	Revision	By	Date

HKM
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Sheet No.
G-2



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Sheet No.
PP-1

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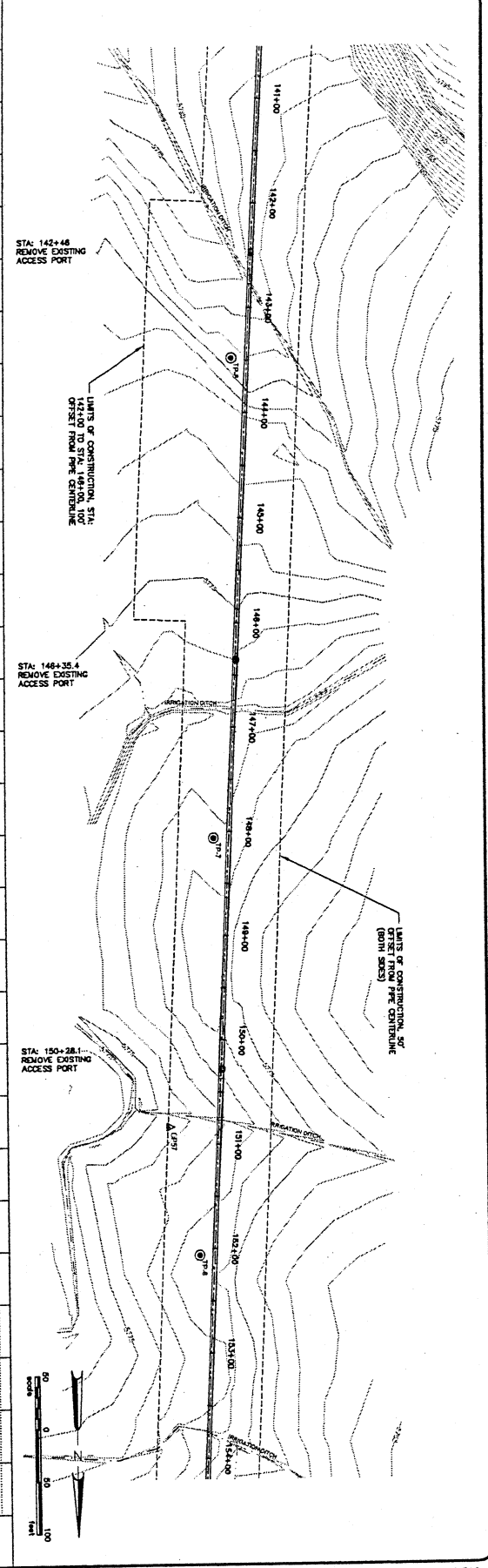
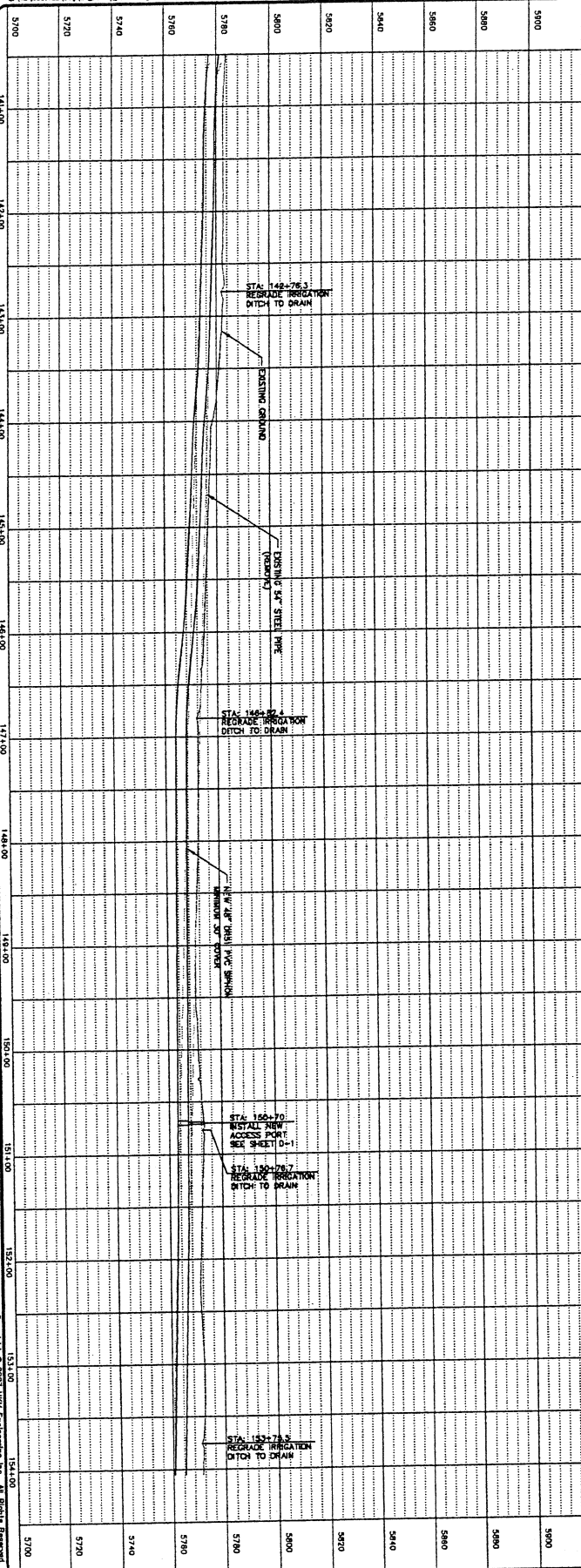
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No.	Revision	By	Date

WARNING
IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO SCALE

**EAST FORK SIPHON REPLACEMENT
GRANITE COUNTY, MONTANA**

**STATION 129+03 TO 141+00
PLAN AND PROFILE**



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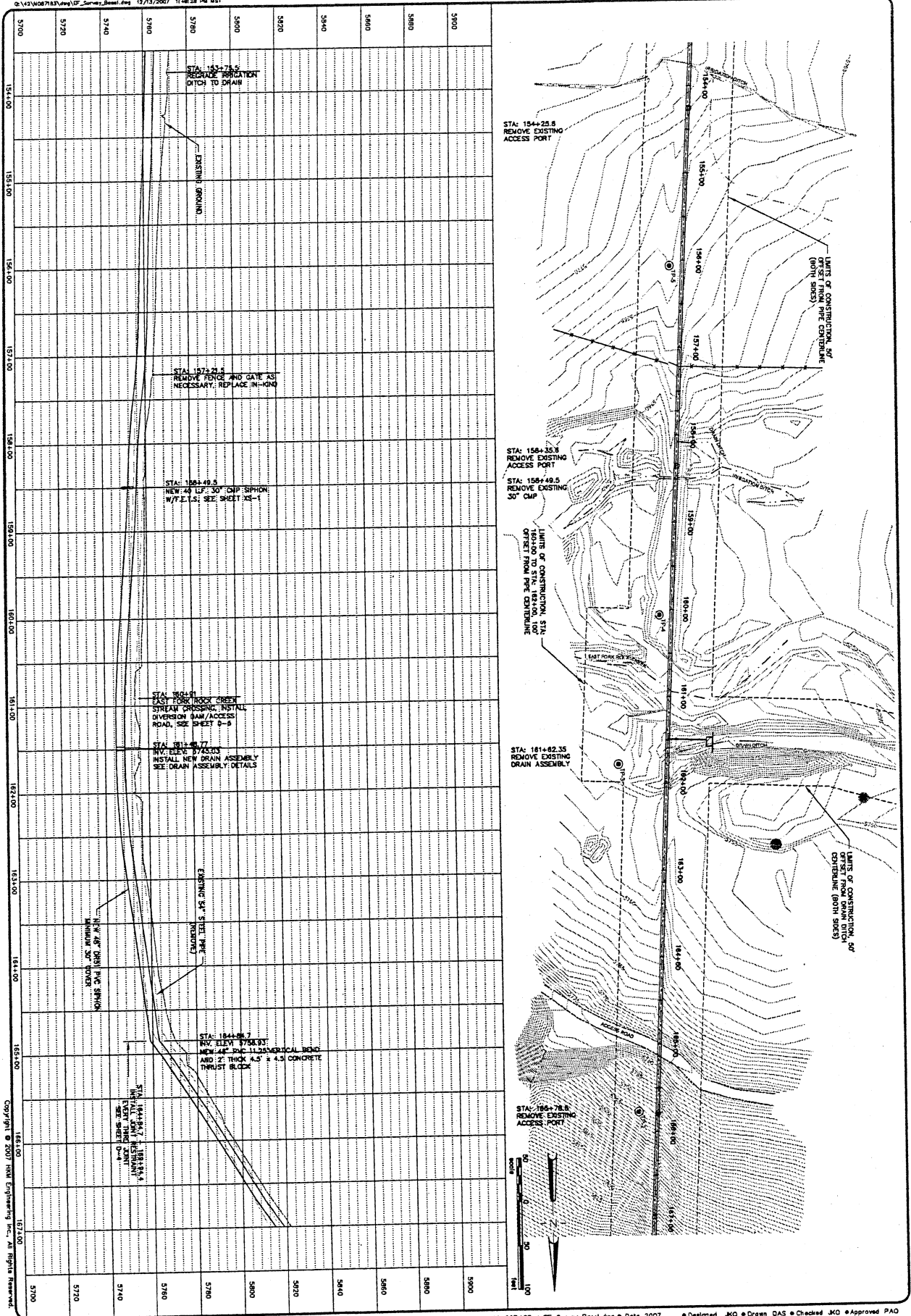
Project No. 42W087.183 • 12_Survey_Base.dwg • Date 2007 • Designed JKO • Drawn DAS • Checked JKO • Approved PAO

**EAST FORK SIPHON REPLACEMENT
GRANITE COUNTY, MONTANA**

**STATION 141+00 TO 154+00
PLAN AND PROFILE**

WARNING
IF THIS BAR DOES
NOT MEASURE 1"
THIS DRAWING IS
NOT TO SCALE

No.	Revision	By	Date



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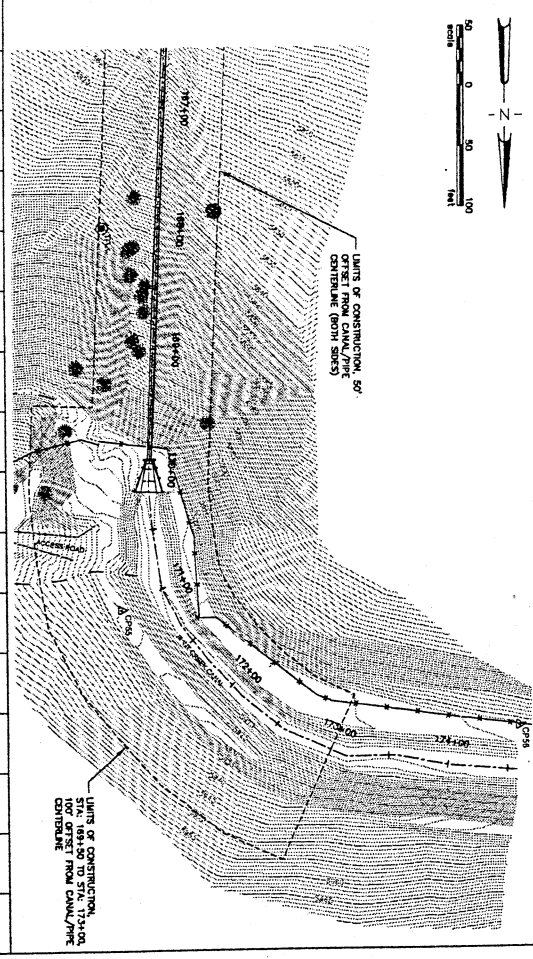
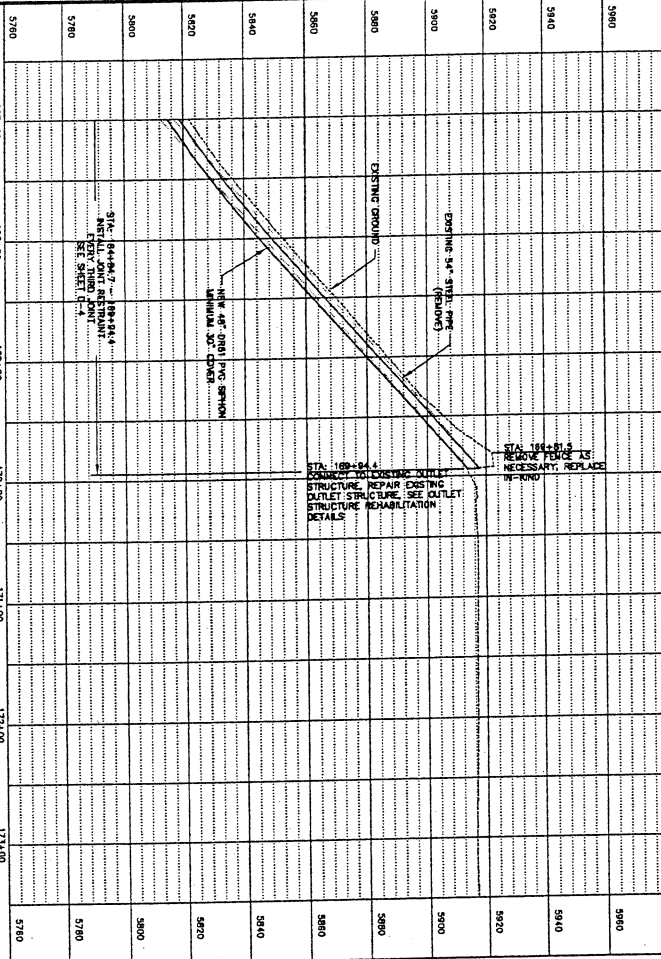
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EAST FORK SIPHON REPLACEMENT
 GRANITE COUNTY, MONTANA

STATION 154+00 TO 167+00
 PLAN AND PROFILE

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No.	Revision	By	Date



VERTICAL ALIGNMENT CONTROL:

STATION	INVERT ELEVATION*	STATION	INVERT ELEVATION*	STATION	INVERT ELEVATION*
129+86.7	5986.56	140+80	5773.03	161+80	5762.83
130+00	5984.58	141+00	5773.56	162+00	5762.82
130+20	5980.75	141+20	5775.20	162+20	5762.82
130+40	5985.88	141+40	5775.15	162+40	5762.81
130+60	5992.50	141+60	5775.02	162+60	5762.80
130+80	5994.67	141+80	5775.02	162+80	5762.80
131+00	5994.56	142+00	5775.64	163+00	5762.80
131+20	5994.75	142+20	5775.64	163+20	5762.80
131+40	5993.84	142+40	5775.35	163+40	5762.80
131+60	5993.84	142+60	5775.35	163+60	5762.80
131+80	5993.84	142+80	5775.35	163+80	5762.80
132+00	5993.84	143+00	5775.35	164+00	5762.80
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140+40	5993.84	151+40	5775.35	172+40	5762.80
140+60	5993.84	151+60	5775.35	172+60	5762.80
140+80	5993.84	151+80	5775.35	172+80	5762.80
141+00	5993.84	152+00	5775.35	173+00	5762.80

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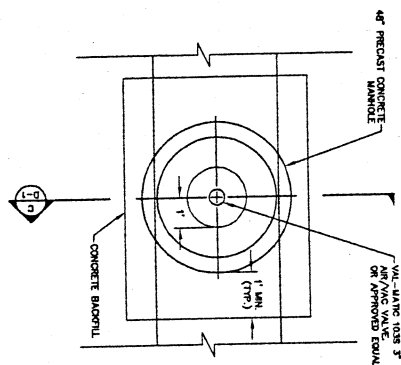
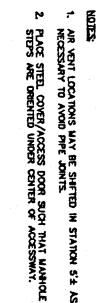
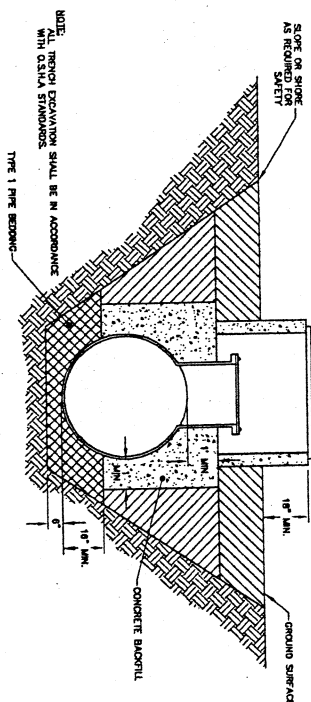
Project No. 420087.183 • DT_Survey_Base.dwg • Date 2007 • Designed JKO • Drawn DAS • Checked JKO • Approved PAK

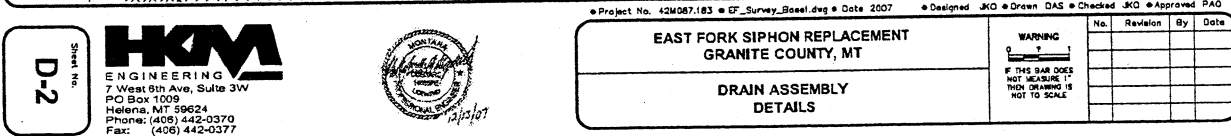
EAST FORK SIPHON REPLACEMENT
GRANITE COUNTY, MONTANA

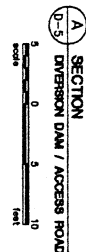
STATION 167+00 TO 169+95
PLAN AND PROFILE

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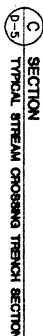
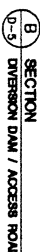
No.	Revision	By	Date



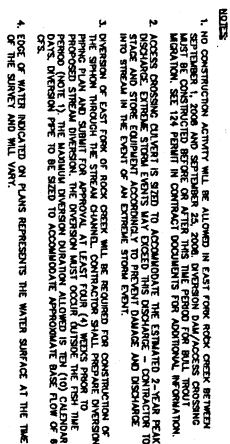


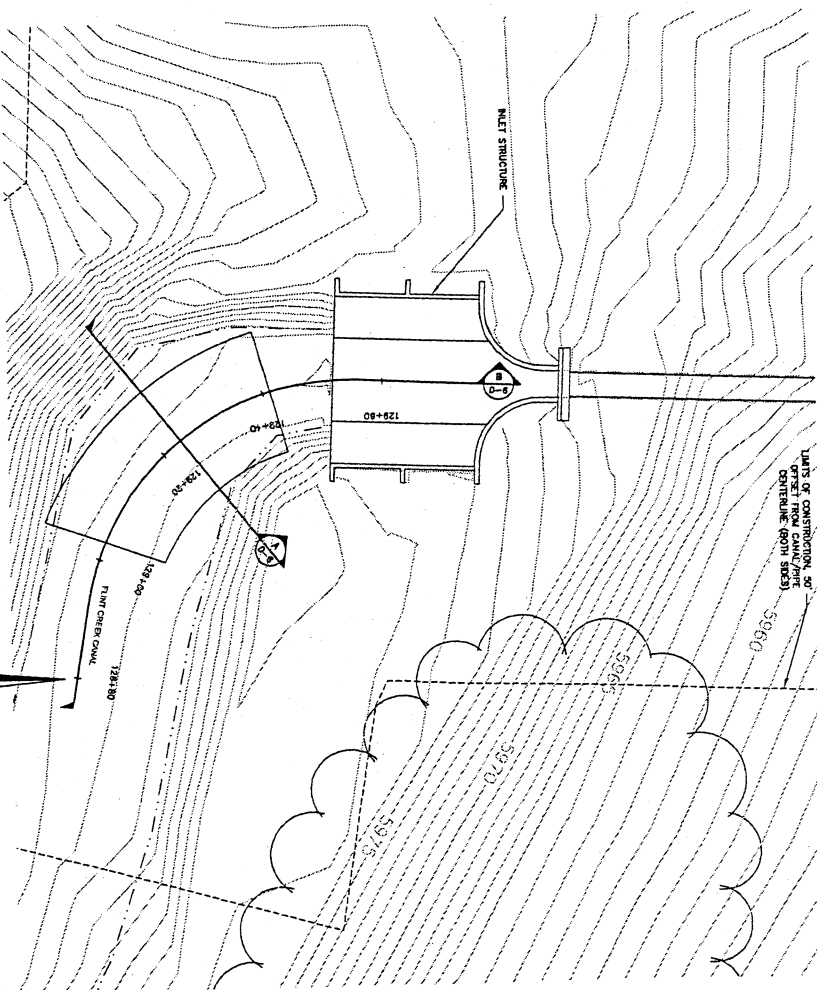
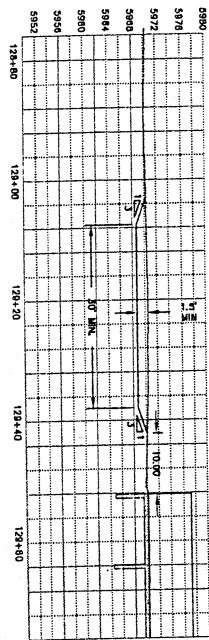
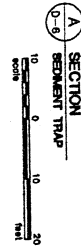
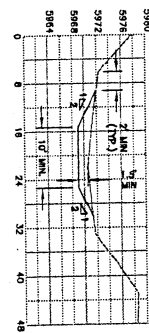


A	SECTION
D-5	DIVERSION DAM / ACCESS ROAD



SECTION	
C	TYPICAL STREAM CROSSING TRENCH SECTION
D-5	





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D-6

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Project No. 42M087.183 • CF_Survey_Sheet.dwg • Date 2007 • Designed JKO • Drawn QAS • Checked JKO • Approved PAO

EAST FORK SIPHON REPLACEMENT
GRANITE COUNTY, MT

SEDIMENT TRAP
DETAILS

WARNING
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NOT MEASURE 1"
THEN DRAWING IS
NOT TO SCALE

No.	Revision	By	Date

1. APPLICATION SPECIFICATIONS AND CODES
CONSTRUCTION AND DESIGN SHALL BE IN ACCORDANCE WITH THE INTERNATIONAL BUILDING CODE (IBC),
NOTED AS FOLLOWS.

2. SPECIAL INSPECTION
a. CONDUCT INSPECT REINFORCEMENT BEFORE CONCRETE IS PLACED.
b. DURING THE TAKING OF TEST SPECIMENS AND PLACING OF REINFORCED CONCRETE

3. DESIGN LOADS
a. DESIGN LOADS AND LOAD APPLICATIONS ARE IN ACCORDANCE WITH IRC.
b. DEAD LOADS: SET HEIGHT
c. UNIFORM FLOOR LIVE LOADS 100 PSF
d. DESIGN WIND LOADS 100 PSF
e. RAILING LOAD 50 PLF TOP RAIL/200 LB POINT LOAD AT TOP OF POST

4. CONSTRUCTION LOADS
a. IF BEING REOPENED FOR OTHER LOADS AND THE DESIGN LOADS NOTED ABOVE, PROVIDE
THROUGHOUT RAISING, SHORING OR OTHER SUPPORTS UNTIL SUPPORT DURING CONSTRUCTION AS
NECESSARY TO PROTECT THE STRUCTURES FROM EXCESSIVE CONSTRUCTION LOADS.

5. CONCRETE
a. LOCATE CONSTRUCTION SHALL CONFORM TO THE AMERICAN CONCRETE INSTITUTE BUILDING CODE
REQUIREMENTS FOR REINFORCED CONCRETE (ACI 308).
b. DETAILING, FABRICATION AND PLACEMENT OF REINFORCEMENT SHALL CONFORM TO DETAILS AND DETAILING
OF CONCRETE REINFORCEMENT (ACI 318). REINFORCEMENT STEEL SHALL CONFORM TO ASTM A618 GRADE
c. ALL BENT REINFORCING BARS SHALL BE SHOP FABRICATED ONLY, REINFORCEMENT OF WELDING OF
REINFORCING SHALL NOT BE PERMITTED UNLESS AUTHORIZED BY ENGINEER.
d. END HOOKS IN REINFORCING BARS SHOWN ON THE DRAWINGS AND NOT DIMENSIONED SHALL CONFORM TO
CONCRETE COVER OVER REINFORCEMENT SHALL BE 2" CLEAR, EXCEPT FOR THE FOLLOWING, UNLESS
OTHERWISE NOTED.
e. f. CONCRETE PLACED AGAINST AND PERMANENTLY
CONCRETE NOT EXPOSED TO WEATHER OR IN
CONTACT WITH EARTH OR WATER
g. h. WALLS 1 1/2" CLEAR
i. BEAMS 1 1/2" CLEAR
j. SLABS 1 1/2" CLEAR
k. OTHER 1 1/2" CLEAR
l. REINFORCING BARS NOT PERMITTED EXCEPT AS DETAIL OR AUTHORIZED BY ENGINEER, LAP
REINFORCING BARS THE FOLLOWING MINIMUMS AT ALL STRESSES, CORNERS AND INTERSECTIONS, UNLESS
OTHERWISE INDICATED. TOP BARS ARE HORIZONTAL BARS WITH MORE THAN 1/2 OF CONCRETE SLAB BELOW
THE BAR.

BAR SIZE	REG BARS	TOP BARS
#3	1-3"	1-7"
#4	2-0"	1-7"
#5	2-0"	2-7"
#6	2-5"	3-1"
#7	3-6"	4-6"
#8	4-6"	5-10"
#9	5-1"	6-7"

6. STAGGER JOINTS
a. LOCATE JOINTS REINFORCEMENT AT SLAB SURFACES WALLS, STAIRWAYS,
b. LOCATE JOINTS REINFORCEMENT AT SLAB SURFACES WALLS, STAIRWAYS,
c. LOCATE JOINTS REINFORCEMENT AT SLAB SURFACES WALLS, STAIRWAYS,
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dq. LOCATE JOINTS REINFORCEMENT AT SLAB SURFACES WALLS, STAIRWAYS,
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- a. STRUCTURAL STEEL CONSTRUCTION SHALL CONFORM TO THE AMERICAN INSTITUTE OF STEEL BUILDING'S (AISC) "DESIGN GUIDE FOR THE DESIGN, FABRICATION AND ERECTION OF STRUCTURAL STEEL FOR BUILDINGS". FINAL STEEL ROUDED CONNECTIONS SHALL BE 1/2" DIAMETER A23 - N-BOLTS WITH STANDARD HOLES, UNLESS OTHERWISE NOTED.
- b. ALL WELDING SHALL CONFORM TO AMERICAN WELDING SOCIETY STRUCTURAL WELDING CODE, STEEL (AWS D1.1), AND SHALL BE PERFORMED BY WELDERS QUALIFIED BY THE APPROPRIATE AISC TEST FOR THE WELDING PERFORMANCE.
8. STEEL DECK:
 - a. STEEL DECK SHALL CONFORM TO THE APPLICABLE SPECIFICATIONS FOR COMPOSITE DECKS, FORM DECKS AND JOINT DECKS OF THE STEEL DECK SYSTEM.
9. EXISTING CONSTRUCTION
 - a. DIMENSIONS, ELEVATIONS AND DETAILS OF EXISTING CONSTRUCTION HAVE BEEN OBTAINED FROM FIELD SURVEYING AND MEASUREMENT. CONSTRUCTION DOCUMENTS, THE CONTRACTOR SHALL VERIFY ALL EXISTING CONDITIONS NECESSARY TO PROPERLY CONSTRUCT NEW AND EXISTING CONSTRUCTION, AND SHALL NOTIFY THE ENGINEER OF ALL VARIATIONS IN THE DETAILS, DIMENSIONS AND ELEVATIONS OF EXISTING CONSTRUCTION WITH NEW CONSTRUCTION WHICH WILL BE IN CONTACT WITH NEW CONSTRUCTION AS IMPOUNDED AND AS ACCEPTABLE TO ENGINEER. APPLY BONDING COMPOUND TO ALL EXISTING CONCRETE SURFACES WHICH WILL BE IN CONTACT WITH NEW CONCRETE IMMEDIATELY PRIOR TO PLACEMENT.
 - b. PROTECT EXISTING MATERIALS FROM DAMAGE DURING CONSTRUCTION, TO PROVIDE SUPPORT AND STABILITY FOR EXISTING WALLS AND FRAMING DURING DEMOLITION AND CONSTRUCTION.
10. DEMOLITION AND CLEANING
 - a. WORK SHALL BE PERFORMED AS SHOWN ON THE DRAWINGS TO REMOVE NEW CONCRETE SHALL BE APPROXIMATELY 1/2" THICK. HIGH PRESSURE WASH, WIRE BRUSH, BUSH HAMMER OR OTHER MECHANICAL MEANS TO REMOVE ALL LOOSE AND DETACHED CONCRETE TO EXPOSE A SOUND SURFACE. ALL DEBRIS SHALL BE REMOVED AND DISPOSED OF IN A LEGAL MANNER. CARE SHALL BE EXERCISED TO PREVENT EXPOSING THE EXISTING REINFORCING STEEL. REMOVE NEW CAP SHALL HAVE SELECTIVE AREAS OF THE UPPER 2 TO 3 INCHES OF DETACHED CONCRETE REMOVED BY MECHANICAL MEANS, INCLUDING BUT NOT LIMITED TO, SAWCUTTING AND CHIPPING. THE EXTERIOR FACE OF THE WALLS EXPOSED TO VIEW SHALL BE SMOOTHED TO PRODUCE A UNIFORM, STRONG CONCRETE REMOVED TO EXPOSE A SOUND SURFACE BY CHIPPING AND OR BY BUSH HAMMERING. CARE SHALL BE EXERCISED TO AVOID DAMAGE TO THE EXISTING REINFORCING STEEL.
 - b. UPON COMPLETION OF MATERIAL DEMOLITION OUTLINED ABOVE, ALL EXPOSED SURFACES SHALL BE THOROUGHLY CLEANED WITH WIRE BRUSHES, WASH, OR A LIGHT POWER WASHING AND OTHER MEANS TO REMOVE ALL LOOSE AND DETACHED MATERIAL. CONCRETE SURFACES SHALL BE ALLOWED TO DRY TO A NEAR SURFACE DRY WITH NO STANDING WATER PRESENT.
11. CRACK REPAIR
 - a. CRACKS TO BE REPAIRED INCLUDE THOSE IDENTIFIED ON THE DRAWINGS, CRACKS NOT IDENTIFIED THAT ARE FOUND TO BE GREATER THAN 1/8 INCHES WIDE SHALL BE BROUGHT TO THE ENGINEER'S ATTENTION FOR EVALUATION. IN NO CASE SHALL THE CONTRACTOR REPAIR CRACKS THAT HAVE NOT BEEN EVALUATED AND APPROVED FOR REPAIR BY THE ENGINEER.
 - b. REPAIRS SHALL BE PERFORMED BY EPOXY INJECTION USING MATERIAL SPECIFIED IN THE PROJECT SPECIFICATIONS.
 - c. CONTRACTOR SHALL FOLLOW MANUFACTURER'S RECOMMENDED PROCEDURES FOR EPOXY INJECTION CRACK REPAIR. THIS MAY INCLUDE THE SEALING OF THE CRACK, THE CRACK INTERFERENCE, AND A BARRIER TO PREVENT WATER INGRESS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROTECTION OF ADJACENT OF INJECTION PORTS ADJACENT THE CRACK AT AN ANGLE TO INTERCEPT THE CRACK AT MINIMUM 12 INCHES.
 - d. MATERIALS SHALL BE STORED AND PROTECTED ON THE JOBSITE TO PREVENT DETEIORATION FROM THE EFFECTS OF TEMPERATURE.

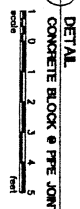
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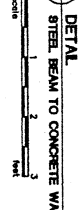


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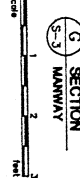
2 DETAIL
(S-3)
CONCRETE BLOCK & PIPE JOINT



3 DETAIL
(S-3)
STEEL BEAM TO CONCRETE WALL

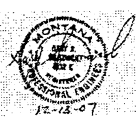


SECTION
(S-3)
MANWAY



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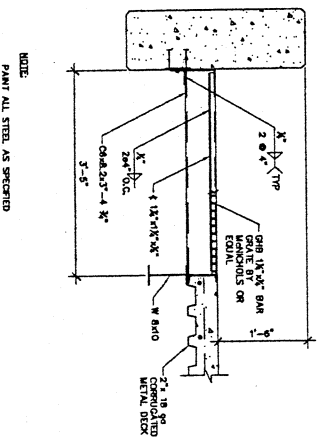
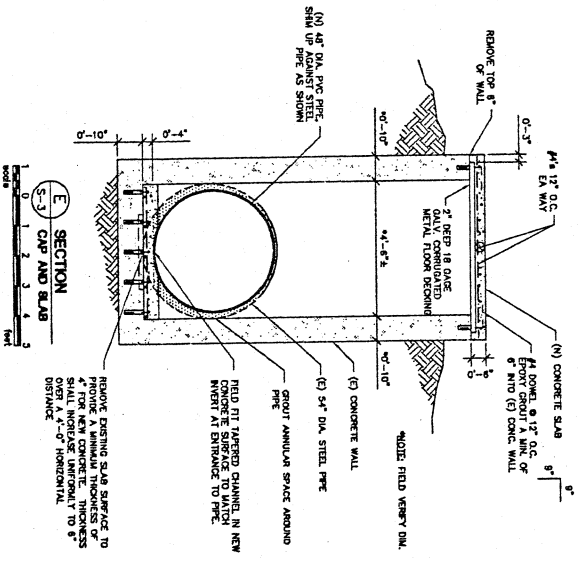
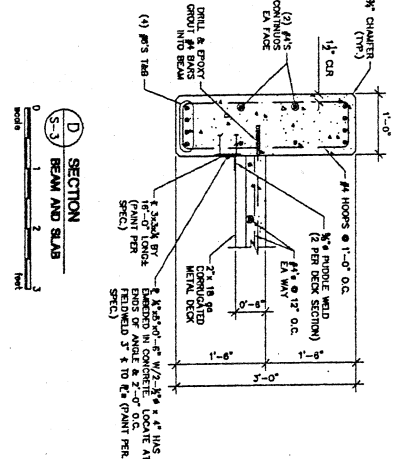
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GRANITE COUNTY, MONTANA

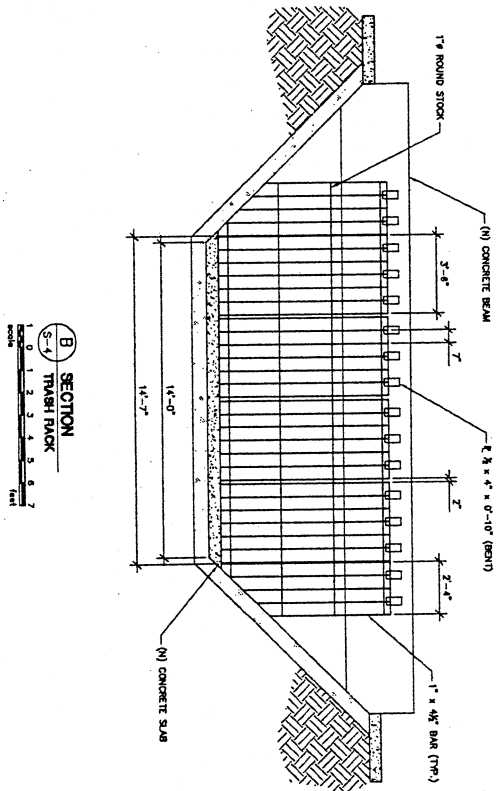
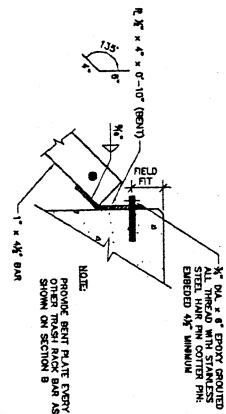
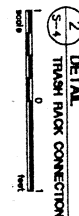
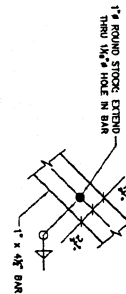
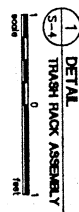
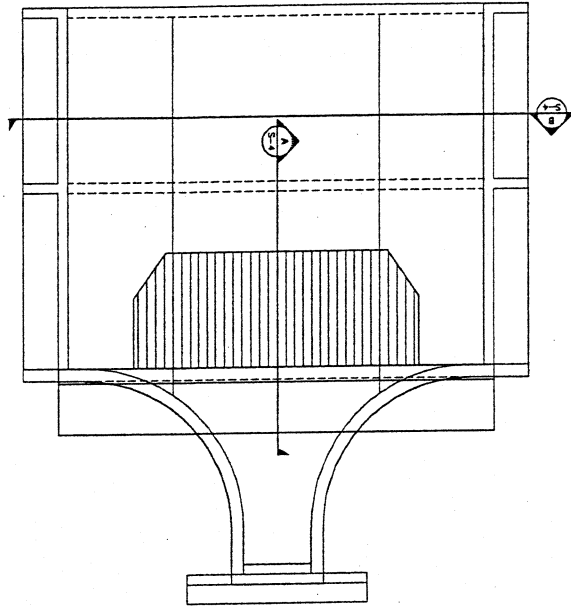
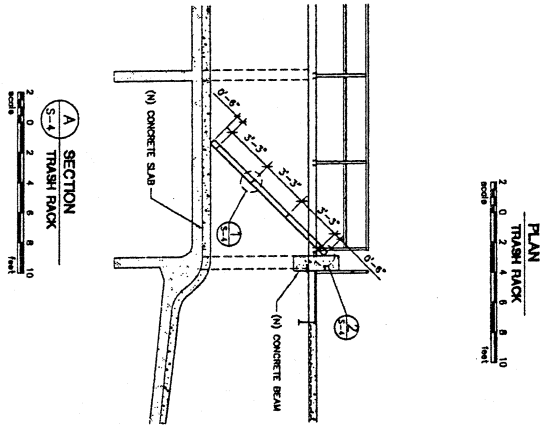
INLET STRUCTURE
REHABILITATION DETAILS

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WARNING
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NOTE:
PAINT ALL STEEL AS SPECIFIED



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Sheet No.
S-4

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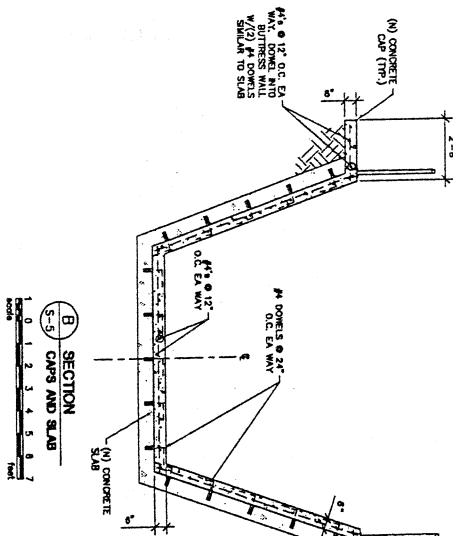
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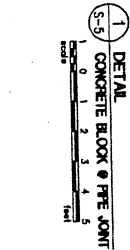
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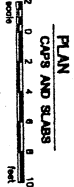
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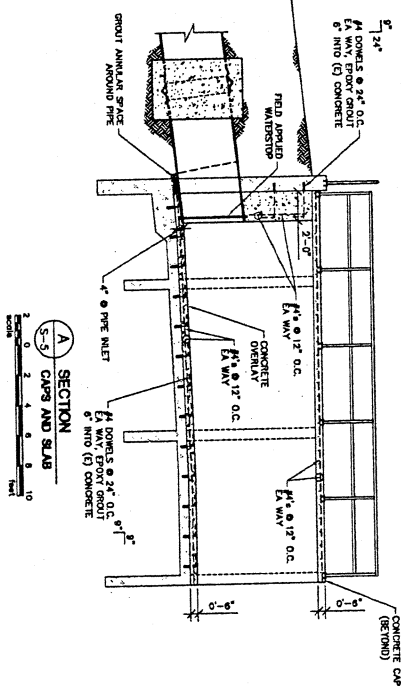
NOTE:
SURFACES OF EXISTING CONCRETE SHALL BE CLEANED OF ALL OIL, GREASE, LOOSE MATERIAL, AND DIRT. SURFACES SHALL BE CLEANED BY AIR-WATER CUTTING, WET SAWING, OR WIRE BRUSH SCOURING AS NECESSARY. SEE NOTE 10 ON SHEET S-1.



(N) CONCRETE OVERLAP THICKNESS SHALL BE 4\"/>



NOTE:
SEE SHEET S-4 FOR TYPICAL BALKING DETAILS



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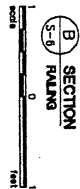
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**EAST FORK SIPHON REPLACEMENT
GRANITE COUNTY, MONTANA**

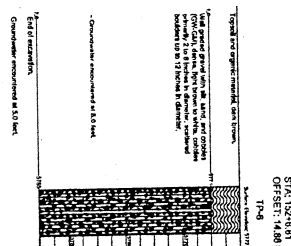
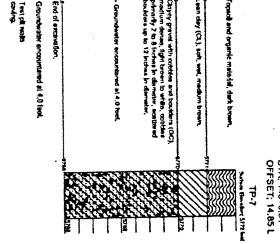
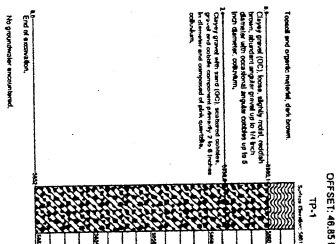
**OUTLET STRUCTURE
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1. TEST PIT LOCATIONS ARE SHOWN IN PLAN VIEW ON SHEETS PP-4 THROUGH PP-4.
2. FOR FURTHER INFORMATION SEE GEOTECHNICAL REPORT.



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WARNING

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IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO SCALE

EAST FORK SIPHON REPLACEMENT GRANITE COUNTY, MONTANA

TEST PIT LOGS



**Appendix B – NRCS Bull Trout Biological Assessment and DNRC
letter concerning the future replacement of the Main
Canal Diversion.**

BIOLOGICAL ASSESSMENT
FOR
UNITED STATES DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

**REPLACEMENT OF AN IRRIGATION DIVERSION SIPHON
THROUGH THE EAST FORK OF ROCK CREEK THAT IS
LIKELY TO ADVERSELY AFFECT THE THREATENED
BULL TROUT**

March 10, 2008

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I. SUMMARY

Determination of Effects

Implementation of the proposed federal action IS LIKELY TO ADVERSELY AFFECT the threatened bull trout (*Salvelinus confluentus*).

Consultation Requirements

In accordance with the Endangered Species Act (ESA), its implementation regulations (50 CFR 402.13), and FSM 2671.4, the United States Department of Agriculture – Natural Resources Conservation Service (NRCS) is required to request written concurrence from the United States Department of the Interior – United States Fish and Wildlife Service (FWS) with respect to determinations of potential effects on the threatened bull trout.

Need for Re-Assessment Based on Changed Conditions

The biological assessment findings are based on the best current data and scientific information available. A revised biological assessment must be prepared if: (1) new information reveals effects, which may impact threatened, endangered, and proposed species or their habitats in a manner or to an extent not considered in this assessment; (2) the proposed action is subsequently modified in a manner that causes an effect which was not considered in this assessment; or (3) a new species is listed or habitat identified which may be affected by the action.

II. INTRODUCTION

The purpose of a biological assessment is to review the possible effects of the proposed federal action on threatened, endangered and proposed species and their habitats. Threatened, endangered and proposed species are managed under the authority of the Federal Endangered Species Act (PL 93-205, as amended). Under provisions of the ESA, Federal agencies shall use their authorities to carry out programs for the conservation of listed species, and shall insure any action authorized, funded, or implemented by the agency is not likely to: (1) adversely affect listed species or designated critical habitat; (2) jeopardize the continued existence of proposed species; or (3) adversely modify proposed critical habitat (16 USC 1536).

The purpose of this biological assessment is to describe and analyze the adequacy of methods proposed to replace a failing irrigation siphon that transfers water across the East Fork of Rock Creek (see map) while minimizing any adverse effects on the threatened bull trout. NRCS State Office and Missoula Area Office biological staffs have developed this assessment in order to facilitate consultation.

III. PROPOSED ACTION

Background

The East Fork (of Rock Creek) dam, canal and siphon were completed in 1938 and put into service during the 1939 irrigation season. The dam and canal are owned and operated by the Montana Department of Natural Resources and Conservation (DNRC). The dam and canal headgate are located on U.S. Forest Service (USFS) land. East Fork Reservoir stores water for use in augmenting irrigation in the adjacent Flint Creek drainage. About one-third mile below the dam, water is diverted into the East Fork Canal and transported about 2.5 miles along the west side of the drainage where it enters a 54-inch diameter, 4056-foot long siphon. Over the course of the irrigation season, the siphon transfers 27,800 acre-feet of water underneath the East Fork, up the adjacent slope and into the Flint Creek drainage. This represents a 28 percent increase in watershed yield for Flint Creek which provides all or part of the irrigation needs for 53 operating units, primarily cow-calf operations, in that drainage.

The expected life of the siphon was 50 years. It is now 69 years old and requires annual repairs for continued operation. During June of 2001, the siphon burst and was shut down, drained and welded. There is a realistic probability of catastrophic failure of the siphon in the near future. This could deliver large quantities of sediment to the East Fork and the main stem of Rock Creek, which represent important bull trout habitat. Failure of the siphon would also lower flows in the Flint Creek drainage by a season total of 27,800 acre-feet. Flint Creek is classified as critical foraging, migration and over-wintering habitat for bull trout although Brad Liermann (personal communication, November, 2007), Fisheries Biologist for the Montana Fish, Wildlife and Parks (FWP) has found only one bull trout in the main stem of Flint Creek, just downstream of the mouth of Sawmill Gulch. Boulder Creek, however, a tributary of Flint Creek, has been identified as very important bull trout habitat.

Construction Techniques to Minimize the Probability of "Take" of Bull Trout

Actual work on the siphon replacement will not begin until Montana FWP issues a Montana Stream Protection Act '124' permit to DNRC for the project. FWP has indicated that the siphon replacement by itself will not pose a significant threat to bull trout if the permit stipulations are followed. Timing of work in the stream channel is key to minimizing adverse effects. The work will be completed between September 15 and November 1, 2008. If possible, work in the channel will be completed by October 15. While the siphon is being replaced underneath the East Fork channel, the stream will be diverted around the construction site through a pipe to minimize excess sediment production. Prior to this, a culvert will be placed in the stream channel and used as a crossing for equipment to minimize disturbance to the channel bed. When construction is complete, the temporary culvert will be removed and the streambanks will be re-vegetated with appropriate native herbaceous and woody species following NRCS standards and specifications.

Scope of this formal consultation

Through this Biological Assessment, NRCS is requesting an incidental take permit for construction activities associated with the siphon replacement only. A "take" permit is requested because there is the potential for short-term adverse impacts to bull trout directly from heavy equipment operation as well as indirectly from sediment inputs to the stream during construction.

On-going "take" of bull trout is occurring in the diversion canal above the siphon as fish are entrained in the East Fork Canal and 1) probably lost as they pass through the siphon; and 2) functionally lost to the population when they are isolated in the canal when the headgate is closed at the end of the irrigation season. However, this BA does not include effects of the irrigation system as a whole for two reasons:

1. NRCS has no ownership or control of any aspect of the irrigation system. We have no authority of any kind to require the Forest Service, DNRC, or the Flint Creek Water Users Association to carry out any activity related to canal headgate screening, spring flushing flows, etc. Therefore, we are not in a position, either legally or practically, to be the lead agency on a system-wide BA. The Forest Service, as the permitting agency, is in a position to serve as the lead agency on a system-wide BA if necessary.
2. The proposed activity does not pass the "but for" test used in the FWS ESA Handbook to document interrelatedness or interdependence. There is clearly a "yes" answer to the following question: Does the activity in question (i.e. the irrigation system at large) occur regardless of the proposed action under consultation (i.e. the siphon replacement)?

IV. SPECIES ASSESSMENT

Distribution and Life History

The Montana Bull Trout Scientific Group (1998) and the Montana Bull Trout Restoration Team (1998) have described the distribution and life history of Montana's bull trout in detail and are incorporated by reference here. To summarize, bull trout need stream and lake habitat that is characterized by the four "C's"; Clear, Cold, Complex and Connected. This very specialized char species tends to spawn in low gradient, cold headwater (third and fourth order) streams over gravel and cobbles in association with groundwater inputs. Eggs and fry are very sensitive to increases in water temperature and to sediment deposition over the gravel/cobble substrate. A site is unsuitable for bull trout spawning if greater than 40 percent of the substrate materials are less than 6.35 mm in diameter. It is critical that there be a source of cover adjacent to the spawning site such as deep pool habitat, coarse woody debris, large rocks and undercut banks. Fry emerge from the substrate during late winter to early spring. While rearing, juveniles prefer large particle sizes in the substrate with low embeddedness. A forest canopy is preferred for juvenile rearing sites. Bull trout may mature in the natal stream or move to larger rivers or lakes. There is variability in life history with regard to use of stream and lake habitat. Adults often move long distances between wintering and spawning areas.

Environmental Baseline

The East Fork of Rock Creek at the siphon crossing is used primarily by migrating adults and as juvenile bull trout rearing habitat (Brad Liermann, FWP, pers. com., 2007). The following is an overview of the status of the above-referenced four "C's" at the proposed project (siphon replacement) site.

Clear

Water leaving the East Fork Reservoir is generally very clean and clear. There is little source of sediment to the stream between the dam and siphon crossing other than some bank instability from livestock use. However, the siphon crossing is also a livestock watering point. Trampling by watering cattle here causes an un-quantified increase in sediment input to the East Fork downstream. Bank stability throughout the project reach has been degraded somewhat by livestock use which may cause an increase in sediment inputs as well. Montana Department of Environmental Quality (DEQ) lists the East Fork as "Not Supporting" aquatic life and a cold water fishery in part because of sediment production associated with grazing management and impacts from hydro-structure flow (Montana DEQ, Clean Water Act Information Center - CWAIC - 2006) and has required Total Maximum Daily Load (TMDL) development for this stream. Brad Liermann, FWP, evaluated the East Fork stream channel and riparian area at two sites near the proposed project reach using the NRCS Riparian Assessment method. The sample sites were approximately one and three miles downstream from the siphon crossing. He concluded that irrigation-related dewatering and bank instability associated with grazing management have contributed excess sediment to the system.

Cold

Bottom water exiting the East Fork Reservoir is very cold. However, on-going livestock management in the project reach has resulted in a wider, shallower stream channel compared to potential. Overhead cover from a variety of willow species has also been reduced by livestock, and possibly moose, browsing. These factors, in combination with lowered flows during the irrigation season result in elevated summer water temperatures over the historic condition. Brad Liermann, FWP, has recorded summer water temperatures as high as 17.5 degrees C at a site about three miles downstream from the siphon crossing. This could create a thermal barrier to bull trout upstream movement. (Note: Low summer flows may not be totally associated with irrigation withdrawals. DNRC has data showing that August -September monthly inflows to the East Fork Reservoir have varied from 2.5 to 16 cfs during the 2004-2006 period of measurement.).

Complex

Habitat complexity, in the form of large woody debris, side channel development, pool and riffle interspersions and undercut banks, has been simplified as a result of irrigation system operation and historic livestock grazing. Spring flushing flows are rare, which limits channel development and dynamics and is expected to exacerbate the whirling disease problem in Rock Creek. Livestock management has not allowed for willow regeneration adequate to provide sufficient overhead cover, woody debris, and bank stability. Low flows during the irrigation season deprive bull trout of deep pool habitat. The presence of the East Fork Dam prevents large woody material, i.e., conifer logs, from accumulating in the channel downstream. Brad Liermann, FWP, assessed the East Fork in terms of "fish habitat quality as related to available cover" at 30 percent of its potential at a site downstream of the siphon crossing.

Connected

Bull trout move long distances, up to 150 miles, between seasonal habitats. Operation of the East Fork Reservoir and canal has severely altered historic movement patterns. The dam prevents migration to important spawning habitat by bull trout that winter in main-stem rivers and lakes although it also prevents upstream movement of introduced brown trout that could compete with bull trout. The East Fork canal entrains an un-quantified number of fish; most of which probably die in the siphon. Both juvenile and adult bull trout as well as numerous juvenile cutthroat trout have been captured in the East Fork canal by USFS and FWP fisheries biologists (Brad Liermann, FWP, pers. comm.. 2007). Summertime low-flows may prevent movement of juvenile and adult bull trout upstream to spawning sites.

Direct and Indirect Effects Analysis

The following analysis is a modification of the methodology outlined in the draft document "A Framework to Assist in Making Endangered Species Act Determination of Effect for Individual or Grouped Actions at the Bull Trout Subpopulation Watershed Scale," U.S. Fish and Wildlife Service, February, 1998. Not all indicators in this document were evaluated, especially those more specific to the U.S. Forest Service planning process.

The purpose of this analysis is to describe the baseline bull trout habitat condition and to evaluate the effects of the siphon replacement on the baseline condition. It is important in this assessment to differentiate between the effects of the siphon replacement itself and effects of the overall irrigation project, including the dam and its operation, the canal, the inter-basin water transfer, and the effects of landowners reducing summer flows in the East Fork by exercising their legal water rights. This biological assessment evaluates the effects of the siphon replacement on bull trout and bull trout habitat. The discussion of overall project effects is necessary to describe baseline habitat conditions and to evaluate the effect of the siphon replacement on those conditions. NRCS has no ownership or control, of any kind, of the operation of the dam, canal or individual irrigation practices. To date, over \$180,000 has been spent on a design for the siphon replacement. If the siphon cannot be replaced in a timely fashion, i.e., by fall, 2008, the cost share funds available may be lost and the design money spent for naught. In addition, the longer siphon replacement is delayed, the greater the chance of a catastrophic failure resulting in negative downstream impacts to bull trout and their habitat. Finally, a functional canal and siphon must be in place before DNRC and the irrigators can proceed with other measures to benefit bull trout such as screening the canal inlet. Accordingly, we believe it is the best interest of bull trout conservation to proceed with the siphon replacement.

Indicator: Subpopulation Size

Operation of the East Fork irrigation project has placed the threatened bull trout in the "Functioning at Unacceptable Risk" category. Low flows during the irrigation season limit movement patterns and habitat quality. The dam prevents upstream and downstream movements of migrating adults and juveniles. The East Fork canal entrains bull trout which are then most likely lost as they pass through the siphon. Even if the fish do not enter the siphon, they are functionally lost to the population because the canal dries up after the irrigation season when the headgate is closed. Livestock grazing practices have degraded stream and adjacent riparian habitat quality, adding more stress to the fish residing in the project reach.

Effects of the Proposed Action

The proposed siphon replacement, in and of itself, will have no additional long-term effect on the East Fork and Flint Creek bull trout populations since existing conditions will be unchanged. In the short-term, increased sediment and direct habitat disturbance during construction has the possibility of causing "take" of juvenile and/or adult bull trout. Measures proposed to minimize the probability of "take" are described elsewhere in this biological assessment (see Section III, Proposed Action). We consider the probability of "take" to be quite low as adult and juvenile bull trout can move rapidly in response to a sediment pulse and construction activity. The project will degrade habitat quality in the short-term (about two weeks) and maintain current conditions in the long-term.

If the siphon is replaced, DNRC plans to replace the East Fork canal headgate, including the installation of a fish screen to prevent entrainment of bull trout and other fish species (the 1936 permit from the U.S. Forest Service required installation of fish screens on all project diversion points). Current plans are to apply to the Montana legislature for funding this project within

three to five Montana legislative cycles. Screening the ditch as a part of this proposed NRCS siphon replacement project is not feasible given the impending headgate replacement in the near future. Screening the ditch at that time will, in part, restore the bull trout subpopulation below the East Fork Dam by eliminating unnecessary loss of fish from the East Fork. DNRC has requested that studies be conducted to quantitatively evaluate the species and life stages of fish using the East Fork in the project reach and entrained into the East Fork canal. This data would be used to determine the exact type of screen required to protect the target fish species and life stages. In 2002, DNRC applied for Fisheries Restoration and Irrigation Mitigation Program (FRIMA) funds to screen the main canal. The FRIMA committee denied this request because of a lack of specific data on fish use of the East Fork between the dam and diversion and fish entrained in the East Fork canal.

The Flint Creek Water Users have agreed to maintain a minimum flow of 5 cfs in the East Fork during the irrigation season if the siphon replacement is completed. This will, to a small degree, have a "Restore" effect on East Fork bull trout habitat as summer water temperature and pool depth are improved. The best estimate we have for minimum flows required to sustain bull trout ranges from slightly over 5 to 12 cfs. The average June and July low flows (1994-2001, 2004) were 1.4 and 1.9 cfs, respectively. Maintaining 5 cfs during the irrigation season will improve habitat conditions while maintaining irrigators' legal rights to divert water.

Indicator: Growth and Survival

A number of factors associated with the East Fork irrigation system result in a "Functioning at Unacceptable Risk" determination for growth and survival of threatened bull trout. The presence of the dam prevents access to spawning habitat and out-migration of adults and juveniles to larger river systems. (At the same time, the dam may prevent the upstream spread of brown trout which directly compete with, and prey on, bull trout, which appear to be maintaining a stable population in East Fork reservoir and in the stream above the reservoir.) Operation of the dam has also nearly eliminated regular spring flushing flows important to channel maintenance, bank building, riparian vegetation establishment and removal of tubifex worms and TAM spores responsible for whirling disease. Adult and juvenile bull trout are lost in the East Fork ditch and siphon. Low flows during the irrigation season reduce available pool habitat and may cause a thermal barrier to migrating bull trout as summer water temperatures exceed 15 degrees Centigrade.

Grazing management in the proposed project reach adds to the stressors affecting growth and survival of bull trout. Bank trampling and browsing of woody riparian vegetation has reduced habitat complexity in the reach.

Effects of the Proposed Action

The proposed siphon replacement, in and of itself, will have no long-term effect on growth and survival of East Fork and Flint Creek bull trout populations since existing conditions will be unchanged. In the short-term, increased sediment and direct habitat disturbance during construction has the possibility of causing "take" of juvenile and/or adult bull trout. Measures proposed to minimize the probability of "take" are described elsewhere in this biological

assessment (see Section III, Proposed Action). We consider the probability of “take” to be quite low as adult and juvenile bull trout can move rapidly in response to a sediment pulse and construction activity. The project will degrade habitat quality in the short-term (about two weeks) and maintain current conditions in the long-term.

The proposed siphon replacement will contribute to improved growth and survival of bull trout once DNRC replaces the East Fork canal headgate and installs a fish screen to prevent entrainment of fish. DNRC will be hesitant to install a new, screened diversion if the siphon is not replaced because of the possibility of catastrophic failure.

Indicator: Water Quality - Temperature

This indicator is currently rated as “Functioning at Risk.” Low flows during the irrigation season cause elevated water temperatures although this may be mitigated to some degree by cold water released from the bottom of East Fork Reservoir. Brad Liermann, FWP, has recorded water temperatures up to 17.5 degrees C; above the 15 degree safe level for bull trout. (These temperatures were measured at the Middle Fork bridge, lower in the drainage and do not represent accurate water temperatures in the project reach.). Elevated temperature could create a thermal barrier for migrating fish as well as a direct health hazard. Grazing management within the proposed project reach also contributes to elevated water temperatures. The stream channel is somewhat over-widened and willow canopy cover somewhat reduced from grazing and trampling impacts.

Effects of the Proposed Action

The proposed siphon replacement will have no long-term effect on water temperature since existing conditions will not change. It is doubtful that construction activities will have any measurable short-term effect on water temperature in the project reach.

Indicator: Sediment and Substrate Embeddedness

This indicator is assessed as “Functioning at Unacceptable Risk” for the proposed project reach. We have no quantitative data documenting the degree of sedimentation and substrate embeddedness in the East Fork. However, visual assessment of existing streambed conditions and the influence of the dam in limiting spring flushing flows point to this high risk categorization. Again, livestock trampling and grazing impacts along the project reach further contribute to degraded habitat condition. The Montana Department of Environmental Quality (DEQ) describes the East Fork as “Not Supporting” aquatic life and a cold water fishery in part because of sedimentation/siltation (Montana DEQ, Clean Water Act Information Center – CWAIC - 2006). Probable causes include impacts from hydro-structure flow, regulation/modification and grazing (poorly controlled grazing) in riparian/shoreline zones. Brad Liermann, FWP, conducted a stream corridor assessment of the East Fork at two sites using the NRCS Riparian Assessment method. He concluded that dewatering and grazing management have altered channel dynamics and sediment transport.

Effects of the Proposed Action

In the long-term, the proposed siphon replacement itself will have no effect on sediment and substrate embeddedness as existing conditions will not be changed. However, short-term, construction related sediment production is the primary reason for a “Likely to Adversely Affect” determination of project effects on threatened bull trout. Section III, Proposed Action, describes measures planned to minimize the probability of “take” during the siphon replacement. The proposed construction timing and methods are those required by FWP for '124' permit compliance. FWP has indicated that the siphon replacement, in and of itself, will not be of significant concern regarding adverse impacts to bull trout if the stipulations in the '124' permit are followed.

Indicator: Chemical Contamination/Nutrients

There is little likelihood of upland chemical or nutrient inputs to the East Fork between the dam and siphon crossing from irrigation system-related factors. However, DEQ (CWAIC, 2006) lists chlorophyll and nitrates as sources of aquatic life and cold water fishery impairment. Livestock grazing management in the project reach may be the cause of elevated levels of these nutrients. Low water levels and associated increased water temperature may be correlated with high chlorophyll levels. We assess this indicator as “Functioning at Risk” in the project reach.

Effects of the Proposed Action

We envision no long- or short-term effects of siphon replacement on the chemical contamination/nutrients indicator.

Indicator: Habitat Access - Physical Barriers

This indicator is “Functioning at Unacceptable Risk.” The East Fork Dam prevents bull trout from accessing the upper watershed. Low summertime flows combined with elevated water temperature may prevent bull trout from moving upstream toward spawning habitat. The East Fork canal entrains bull trout which are then lost in the siphon.

Effects of the Proposed Action

The proposed siphon replacement will have no effect on this indicator. However, if the siphon is replaced, the water users will leave a minimum of 5 cfs in the stream during the irrigation season. DNRC will screen the canal diversion as a part of replacing the canal headgate as well. Both of these actions will improve bull trout habitat conditions. DNRC plans to apply for funds to replace the diversion headgate and screen the intake within three to five legislative cycles. Both of these actions depend on having the siphon replaced so DNRC and the Flint Creek Water Users (FCWU) have assurance that the irrigation system will remain functional.

Indicator: Large Woody Debris

The East Fork is “Functioning at Risk” for this indicator. Grazing impacts have probably reduced inputs of willow stems and root wads that fall into the stream. The dam eliminates

recruitment of large conifer trees carried by spring runoff from higher in the drainage. Large woody debris provides cover for bull trout and forms pool habitat and traps sediment for bank building.

Effects of the Proposed Action

The siphon replacement will have no short- or long-term effect on this indicator.

Indicator: Pool Frequency and Quality

We have no quantitative data comparing pool frequency and quality in the project reach to a suitable reference reach. However, the combination of low flows during the irrigation season, a dramatic reduction in frequency of spring flushing flows, and grazing management impacts points to a “Functioning at Unacceptable Risk” determination for this indicator. Elevated summer water temperatures and reduced overhead vegetative cover over pools further contributes to lowered pool quality. DEQ (CWAIC, 2006) lists alteration of streamside vegetative cover as a probable source of aquatic life and cold water fishery impairment in the East Fork.

Effects of the Proposed Action

There will be no long-term effects from the siphon replacement, in and of itself, on frequency and quality of pools. The short-term sediment pulse during construction is an adverse effect. Section III, Proposed Action, describes measures that will be used to minimize adverse effects. These measures are required by Montana FWP for compliance with the '124' permit.

The Flint Creek Water Users have agreed to maintain a minimum of 5 cfs in the East Fork during the irrigation season if the siphon is replaced. This will, to a small degree, have a positive effect on pool frequency and quality. The best estimate we have for minimum flows required to sustain bull trout ranges from slightly over 5 to 12 cfs. The average June and July low flows (1994-2001, 2004) were 1.4 and 1.9 cfs, respectively. Maintaining 5 cfs during the irrigation season will improve habitat conditions while maintaining irrigators' legal rights to divert water.

Indicator: Channel Condition and Dynamics – Average Channel Width:Depth Ratio

Normal stream channel dynamics in the East Fork have been dramatically altered by the presence and operation of the dam. Spring flushing flows are rare. This prevents the on-going formation and maintenance of a narrow, deep channel. Instead, the stream is over-widened and shallower compared to its potential. Grazing impacts have also contributed to this somewhat degraded condition. Brad Liermann, FWP, noted that the East Fork width-depth ratio is somewhat higher than expected for a Rosgen “C” channel while conducting a stream corridor assessment. The altered channel is significantly less suitable as bull trout habitat for a number of reasons discussed in this section. The East Fork is “Functioning at Risk” for this indicator.

Effects of the Proposed Action

The proposed siphon replacement will have no short- or long-term effects on the channel width:depth ratio. However, landowners associated with the irrigation system have offered to work with NRCS to improve riparian/streambank condition in the project area following replacement of the siphon.

Indicator: Streambank Condition

A lack of spring high water events in the East Fork and reduced sediment input from sources above the dam limits the bank building function associated with these flows. This, combined with grazing/trampling in the project reach, results in a streambank condition indicator of "Functioning at Risk." A FWP stream corridor assessment (Brad Liermann, FWP, pers. comm., 2007) noted excessive streambank erosion associated with livestock impacts.

Effects of the Proposed Action

The siphon replacement will have no long-term effect on streambank condition in the project reach. There will be short-term effects at the siphon crossing. Compliance with '124' permit stipulations will minimize any adverse effects. Montana FWP fisheries biologists do not consider the siphon replacement itself to represent a significant adverse effect on bull trout or bull trout habitat if the requirements of the '124' permit are implemented (see Section III, Proposed Action).

Indicator: Floodplain Connectivity

Irrigation system-related impacts, including severely reduced spring runoff levels and low summer flows, result in a "Functioning at Unacceptable Risk" determination for this indicator. Over-bank flows are very infrequent relative to historic frequency. There has been a moderate degradation of wetland function and riparian vegetation succession associated with the operation of the East Fork Dam and irrigation system.

Effects of the Proposed Action

The siphon replacement itself will have no short- or long-term effects on this indicator. However, an increase in summer base flows, agreed to by the FCWU as a condition of receiving NRCS assistance, will improve floodplain connectivity to some extent.

Indicator: Change in Peak/Base Flows

This indicator is "Functioning at Unacceptable Risk." Operation of the East Fork Dam and associated irrigation system has caused 68 years of pronounced changes in spring peak flow and summertime base flow relative to an undisturbed watershed of similar size, geology and geography.

Effects of the Proposed Action

The proposed siphon replacement itself will not directly affect this indicator. However, the irrigators have agreed to maintain a minimum base flow of 5 cfs in the East Fork as a part of the overall project. This will have a minor “Restore” effect on bull trout habitat.

Indicator: Disturbance Regime

This indicator is “Functioning at Unacceptable Risk.” On one hand, there is a lack of normal disturbance from spring high water. On the other, there is chronic adverse disturbance from poorly controlled livestock grazing. Eliminating grazing could result in severe noxious weed infestations in riparian habitat. Changes in grazing management could improve streambanks, channel configuration and riparian habitat. As a group, the FCWU and DNRC have no control over grazing practices within the project reach. However, individual landowners have offered to work with NRCS to improve grazing management.

Effects of the Proposed Action

The siphon replacement will have no long-term effects on the disturbance regime since existing conditions will not change. There will be short-term adverse effects during construction in the form of sediment inputs to the East Fork. Section III, Proposed Action, outlines measures to be used to minimize the probability of “take.” These measures are required for compliance with the stipulations in the '124' permit. Montana FWP fisheries biologists have indicated that the siphon replacement will not significantly affect bull trout or their habitat if these measures are applied.

Integration of Species and Habitat Conditions

Cumulative disruption of habitat from the East Fork Dam and operation of the associated irrigation system has resulted in a clear, on-going threat to bull trout in the watershed. The dam has eliminated connectivity between the lower watershed and spawning/rearing habitat above the reservoir. At the same time, it is possible that the dam is limiting the adverse effects of competing brown trout in the upper watershed. A relatively stable bull trout population currently exists in East Fork Reservoir and East Fork Rock Creek upstream of the reservoir (Brad Liermann, FWP, pers. com., 2007). Grazing management in both the East Fork and Flint Creek (irrigated by East Fork water) continues to degrade bull trout habitat through direct streambank impacts as well as overuse of woody riparian vegetation. Entrainment in the East Fork canal and subsequent loss in the siphon also threatens the bull trout population. The overall evaluation of bull trout habitat condition is “Functioning at Unacceptable Risk.” See Table 1, Summary of Environmental Baseline and Project Effects.

Table 1. Summary of Environmental Baseline and Project Effects

Indicators	Environmental Baseline			Project Effects*		
	Functioning Appropriately	Functioning At Risk	Functioning At Unacceptable Risk	Restore	Maintain	Degrade
Subpopulation Size			X			X
Growth and Survival			X			X
Water Temperature		X			X	
Sediment and Substrate Embeddedness			X			X
Chemical Contaminants and Nutrients		X			X	
Physical Barriers			X		X	
Large Woody Debris		X			X	
Pool Frequency and Quality			X			X
Ave. Channel Width:Depth Ratio		X			X	
Streambank Condition		X				X
Floodplain Connectivity			X		X	
Change in Peak and Base Flows			X		X	
Disturbance Regime			X		X	
Integration of Species and Habitat Conditions			X		X Long-term	X Short-term

*All adverse effects are short-term; compliance with FWP's '124' permit will minimize "take"

Cumulative Effects Analysis

We know of no similar projects proposed within the East Fork, Flint Creek, or nearby watersheds. Cumulative effects on bull trout habitat from a combination of dam and associated irrigation

system operation and grazing management are significant as described above. Replacement of the East Fork canal siphon will facilitate improvement of bull trout habitat as discussed in the following section.

Determination of Effects

The proposed siphon replacement is "likely to adversely effect" bull trout because of the short-term possibility of causing "take" directly from construction activities and/or from associated sediment produced during construction. The potential for adverse effects will be minimized by strict adherence to the stipulations in DNRC's '124' permit from FWP (see Section III, Proposed Action). As noted above, FWP has indicated to NRCS that the siphon replacement by itself has little potential to adversely effect bull trout if the '124' permit stipulations are followed.

Failure to replace the siphon has potential to adversely affect bull trout both in the short- and long-term. First, a catastrophic failure of the siphon could deliver large amounts of sediment to the East Fork; a potential source of "take" as well. Secondly, a catastrophic siphon failure would remove 27,800 acre-feet of water from Flint Creek. Third, bull trout habitat improvement measures - such as maintenance of minimum summer flows in the East Fork, investigation of minimum reservoir levels required for bull trout, and installation of a fish screen on the canal inlet - depend on replacement of the siphon. (Minimum reservoir pool elevation is currently set at 6,000 feet by the DNRC's Operation and Maintenance Manual to prevent ice damage to the inlet structure. Work is needed to determine if this is adequate for bull trout. The bull trout population appears to be stable in the East Fork Reservoir and above.). DNRC and FCWU need to know that the irrigation system will remain functional before investing in improvements and management adjustments. Landowners involved with the irrigation system have also offered to work with NRCS to improve riparian and stream channel condition through grazing management planning. NRCS believes it is in the best interest of all affected parties - FWS, FWP, DNRC, FCWU - to replace the siphon during Fall 2008, as per the stipulations in the '124' permit.

The bull trout restoration goal for Rock Creek is to "Maintain self-sustaining bull trout populations in all watersheds where they presently exist" (Montana Bull Trout Restoration Team, 1998). Replacing the East Fork siphon can be a part of meeting this goal by maintaining existing, augmented stream flows in Flint Creek, making possible the screening of the East Fork diversion inlet and allowing for implementation of a minimum 5 cfs flow in the East Fork during the irrigation season.

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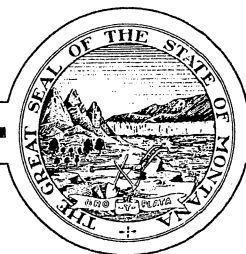
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March 13, 2008

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RE: East Fork of Rock Creek Water Storage Project and Take Permits

Dear Mr. Wilson:

This letter seeks to clarify and address concerns raised during recent conversations between the Montana Department of Natural Resources and Conservation (DNRC), U.S. Fish and Wildlife Service (USFWS), the U.S. Forest Service (USFS), Montana Division of Fish, Wildlife and Parks (DFWP), and the Natural Resource and Conservation Service (NRCS), concerning ongoing and future work on the East Fork of Rock Creek project, a state-owned water storage facility. Our current rehabilitation efforts on the East Fork Siphon provided the impetus for these discussions.

The item of specific concern is the rehabilitation of the diversion structure on the main canal feeding the siphon. This effort will primarily address the issue of integrating a fish screening system, as outlined in our current special use permit with the USFS. While it is too late to submit a request to our state legislative process for this year, we agree to submit the appropriate legislative request to the 2011 Legislative session (January 2011).

The DNRC will also research and apply for various funding sources for a fish screening system. Specific state funding programs include Future Fisheries, the Clarks Fork Restoration Fund, the Environmental Contingency Fund, and the DNRC Renewable Resource Grant and Loan (RRGL) program. If needed, federal sources such as the NRCS Environmental Quality Incentive Program and the USFWS Fisheries Restoration and Irrigation Mitigation Act (FRIMA) Grant program will also be looked at as possible resources.

For your information, a typical timeline for completing projects funded by the Montana legislature follows:

- January – February 2010: Submit proposed legislative request for internal DNRC review. For completeness, the request includes a cost estimate, identifies funding sources, and provides a design and construction timeline.
- May 2010: RRGL applications submitted to the DNRC Conservation and Resource Development Division.
- August 2010: Final legislative requests are submitted.

- January – April 2011: State legislature in session; legislative proposals are evaluated and approved / disapproved.
- July 2011: Beginning of the 2013 Biennium. The DNRC State Water Projects Bureau would begin the process of hiring a consultant for design.

Once the DNRC receives approval to proceed, pending unforeseen circumstances, engineering design and construction documents can be completed by January of 2012. Construction could likely begin early fall 2012, with final completion within two or three months.

For this schedule to work, the Department will need the appropriate biologic data from the DFWP, USFWS and the USFS. Grant and funding applications are competitive, and our success in obtaining them is contingent on providing the necessary supporting documentation. The DNRC also needs this data, along with the input from the identified agencies, to determine what type of screening system will be required to provide the fishery protection on this 200-cfs canal. As discussed in our conversations, a previous funding request to FRIMA submitted by DFWP in 2002 was denied for lack of supporting biologic data.

We anticipate that critical biological information needed to support this project will be provided by DFWP and the USFS in a timely fashion. This is important when working with various funding entities. Application deadlines, funding restrictions between fiscal years, and data requirements will likely be very different between each potential funding source. Any help in dealing with these issues will be greatly appreciated.

Given our commitment to the schedule above, it is our understanding that the USFWS will issue a take permit for Bull Trout to the DNRC until such time we have an appropriate screening system in-place. Also, per our conversation, you indicated that after the diversion is rebuilt and screen installed, the USFWS would need to issue another take permit to deal with the issue of incidental take into the canal, even with the screen in-place.

With a new siphon in-place this fall, and a new diversion with an appropriate fish screen in the near future, we can be assured of the continued agricultural and environmental benefits of the East Fork of Rock Creek Water Storage facility.

If you have questions or wish additional clarification on our legislative process, please contact Kevin Smith, State Water Projects Bureau Chief, at 444-2932 or email Ksmith@mt.gov.

Thank you for your time and assistance on this important project.

Respectfully,



Mary Sexton
Director, DNRC

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Bill Dennis, FCWUA
Charlene Bucha Gentry, USFS
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